

40 Back

POPULAR Computing WEEKLY

Only 50p.

with Home Computing Weekly

5-11 December 1985

It's the best selling weekly

Vol 4 No 49

**THIS
WEEK**

Amstrad sets its sights on IBM



*Wigmore's
C64 Mouse*



*Midi Music
Progress*



AMSTRAD is believed to be aiming to tackle IBM head-on with the launch of an IBM PC compatible machine in the Spring next year.

Much of the groundwork for Amstrad's entry into the business computer market has already been done.

The PCW 8256 word-processor model launched by Amstrad in September has established links with office equipment distributors who will be expected to take the

follow-up machine.

Many of the CP/M packages being specifically designed for the 6128 and 8256 will also run on the PC. Mallard Basic, Locomotive Software's language package bundled with the 8256 has already been developed as a 18-bit version for the IBM compatible.

The model is unlikely, though, to run the IBM version of Digital's CP/M, CP/M 86. Frank Iveson, operations manager of Digital Research

said, "All our discussions with Amstrad are about 8-bit machines, there is no 18-bit at all."

Locomotive has also acquired the services of Howard Fisher who was formerly in charge of Acorn's ABC product development. The ABC range, now largely dropped by Acorn, included as its flag-ship model the ABC 310, a fast IBM compatible based on the advanced 80286

continued on page 4

MICRO MAGIC



Find out if you have won an Amstrad 6128 this week or at least some special *Popular Computing Weekly* cassette labels.

Enter your personal Micro Magic number into our special computer program which is printed on page 33.

Lord of the Rings

PART 1 of Lord of the Rings, the long-awaited follow up to *The Hobbit*, is to be released this week by Melbourne

House, for the Spectrum Plus.

The twin-cassette and book package costs £15.95. Full story on page 8.



INSIDE 100 SPECIAL LETTS COMPUTER USER'S DIARIES TO WIN

THE SMASH HIT NO.1 ARCADE GAME!

COMMANDO

Japan Capsule Computers (UK) ©1985



SUPER JOE CRACK COMBAT SOLDIER FIGHTS A LONE BATTLE AGAINST OVERWHELMING ODDS. ALL THE ACTION AND TENSION OF THE WORLDS NUMBER ONE ARCADE GAME.



**CRASH
SMASH**

AVAILABLE NOW ON
SPECTRUM £7.95
COMMODORE 64 £9.95
COMING SOON ON
AMSTRAD & BBC £9.95

elite

Elite Systems, Anchor House, Anchor Road, Aldridge, Walsall, England.
Tel: (0922) 59165 "Consumer Hotline"

4 NEWS

Sinclair shows hefty loss

11 MIDI

A two page special which looks at the powerful new sound feature on the new micros

13 COMPETITION

Win a Letts micro diary in this special competition

14 STREET LIFE

Christina Erskine talks to Tony Rainbird who is heading British Telecom's new up-market software label

17 SOFTWARE REVIEWS

Little Computer People on the Commodore 64 and Swords and Sorcery on the Spectrum

20 HARDWARE REVIEWS

Wigmore's Mouse for the Commodore 64

22 AMSTRAD

Data Protection Act - does it apply to you?

24 SPECTRUM

Code Code and more Code, part two of our Machine Code arcade game

26 QL

Part two of the Neverending Story

28 BBC

Work out your Bank Account on disc

30 COMMODORE 64

The last instalment of our filing program



Wigmore's C64 mouse - see page 20

6 Letters

33 Micro Magic

35 Bytes and Pieces

36 Codewords

38 Arcade Avenue

40 Adventure

33 Peek and Poke

59 New Releases

62 Puzzle, Ziggurat, Hackers

EDITORIAL

Following the debate concerning the introduction of the Lenslok anti-piracy device on a number of prestige software products this autumn it was very encouraging to hear from Firebird that some of the expected savings are to be passed on to the software buyers themselves.

The reason Firebird's move to pass on some of the saving will be particularly welcomed is that - almost without anyone noticing - software prices have crept up over the last 18 months by almost a 100 per cent.

Remember imagine when it first started? It was noted for its one-price policy: all its titles were £9.90. Then it became reasonable to charge higher prices depending on machine; the higher the cost of the hardware - and by association the better off the owner - the more

it was acceptable to charge. So C64 software cost more than Spectrum titles, and BBC software beat the lot.

Then, first Ultimate and then Ocean/US Gold settled on the magical figure of £9.95. Since then most other software houses have followed suit and a shade under £10 is now the norm.

Yet, £10 is an awful lot to spend on a single program. How many young people can afford to fork out that kind of money once a week? Very few. And the deterrent of price alone could itself be a powerful reason to copy.

Software houses may be pricing themselves out of their livelihood.

Entertainment software prices should be pegged at roughly the same as a music cassette or record - around £8-7, because that is their perceived worth.

Editor David Kelly News editor Christina Erskine Features editor Graham Taylor Software editor John Cook Production editor Lynne Constable Editorial secretary Lucinda Lee Advertisement manager Jeff Raggett Advertisement Executive Diane Holyoak Classified executive David Osen Administration Geraldine Smyth Managing editor Duncan Scot Publishing director Jenny Ireland. Published by Sunshine Publications Ltd, 12-13 Little Newport Street, London WC2H 7PP. Tel 01-437 4343 Telex 296378 Typeset by Publishers Reprographics Services Ltd, 4 Roger Street, London WC1. Printed by Greenaway Harrison, Sutton Road, Southend-on-sea, Essex. Distributed by S M Distribution, London SW9. Tel 01-274 8611, Telex 281643 © Sunshine Publications Ltd 1989.

ABC

56,052 copies sold every week
(Jan-June 1984 ABC).

Popular Computing Weekly. Tel: 01-437 4343.

How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles, and any accompanying programs, should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here - so please do not be tempted. **Accuracy** Popular Computing Weekly cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

Computer Trade Association Magazine of the Year

ADVERTISEMENT

'Having worked a lot with the Amstrad, I have found the Enterprise's
256 colours and their versatile use to be a big advantage
- Ed Hickman, Mastertronic programmer

Sinclair turns in £18.3m loss

SINCLAIR Research's financial results announced last week show clearly the reason the company hit financial trouble during the summer.

The figures show the company made an £18.3m pre-tax loss for the year ending March 31 1985. This compares with a £14.2m profit for the previous year.

The gloomy picture results from Sinclair having to drastically reduce the estimated worth of high stocks of Spectrum and QL machines held by the company. In total Sinclair wrote down the estimated value of micros held by £22.7m.

Since March the company has taken steps to reduce its high stock levels, first through its £10m Spectrum Plus deal with Dixons, then with a dramatic price cut on the QL from £399.99 down to £199.99.

Despite the loss, however, Sinclair's turn-over continues to rise, as it has done since the company's inception. Turn-



over to March 31 rose to £102.8m from the previous year's £77.7m. Exports were also up; they now comprise 40% of Sinclair's sales as compared to 32%.

Sir Clive Sinclair said that profits were sharply hit by the lack of business in the final quarter (the first quarter of 1985) and the need to revalue stock downwards. He also said that the substantial provisions made by the company at the nine-month stage (at the end of 1984) proved subsequently to be inadequate in the light of the virtual cessation of deliveries to retailers in the first quarter of 1985.

Program hitch for C128

IT WOULD seem that the new Commodore C128 micro is not completely software compatible with all Commodore 64 programs.

Although Commodore has advertised the C128 as being completely software compatible with the C64 in C64 Mode, it appears that some minor changes have been made to the display chip which are causing problems with a few titles.

"There are two additional

registers at the end of the video chip," explained Commodore UK programmer Mark Palmer. "These were normally invisible in C64 mode, but some programs may have written over them, although they should not have. The only other problem we've come across is with some fast loaders."

One game that has been causing problems is *Frankie Goes to Hollywood*, published by Ocean and written by Denton Designs. A spokesman for Denton Designs said, "This sounds like a problem with the loader rather than the game - since as far as I know there is nothing in there that would stop the game from running normally."

Mark Palmer advised anyone having trouble running C64 games on their C128 to contact the software company first, in case an up-dated version has been prepared.

Amstrad PC

◀ continued from page 1

processor. Amstrad is expected to launch its IBM compatible micro next month - around the time that Commodore delivers its rival Amiga micro.

An Amstrad spokeswoman commented, "We have no plans for the near future to bring out any other pieces of computer equipment."

Infocom's adventures out on CP/M

INFCOM'S highly acclaimed adventures, including *The Hitchhiker's Guide to the Galaxy*, will soon be available on a much wider range of machines following UK publisher Softsel's decision to convert them to run under the CP/M operating system.

Apart from *Hitchhiker's Guide*, *Zork I*, *Seastalker*, *Planetfall* and *Deadline* are also to be converted. Prices have also been reduced. *Hitchhiker's Guide* will now cost £24.95 and the others £19.95.

"I am certain of a huge response from users of machine like the Amstrad, BBC and Einstein," said Peter Scatchard, Softsel's marketing manager.

The conversions should be available within the next two weeks.

Sub-£1,000 Amiga?

COMMODORE'S Amiga micro, due for launch in this country at January's *Which computer?* Show (see *Popular* November 28), may yet be priced at under £1,000 for the basic model.

Commodore is apparently striving to price the Amiga, without the high resolution monitor, at between £800 and £1,000. The US price for the basic machine is \$1295, which



converts directly to £877, at current exchange rates. The version with the monitor costs around \$1900 (£1287).

Commodore itself would only say, however, that a price has yet to be fixed.

Fraud squad goes in at Medic

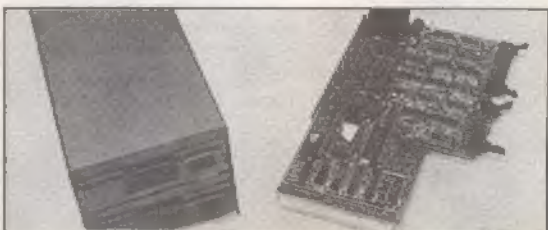
locked out of the company premises after non-payment of rent.

The Fraud Squad is now looking through all Medic's paperwork, which includes orders, cheques and letters complaining of non delivery of goods. "It is not an investigation as such," said a member of the Fraud Squad. "We won't know if the company has acted fraudulently until we have been through all the papers."

Medic's bank account has been frozen by one creditor and a winding-up order placed on the company by another.

"I would not advise anyone to order goods from the Medic at all," the Fraud Squad spokeswoman added.

Anyone who has ordered and not received goods from Medic should contact Sgt Young, Hampshire Constabulary, Orchard Lane, Alton, Hants (0420 82244).



Rings released

TOLKIEN'S *Lord of the Rings* trilogy is being published in three parts by Melbourne House. Part I released this week is based on the first book, *The Fellowship of the Ring*. The next two books, *The Two Towers* and *The Return of the King*, and their associated games are to be released next year.

At £15.95, the first game includes three adventures and a copy of the book, *The Fellowship of the Ring*. Two of the games are full scale text and graphic adventures, while the third is a 'beginner's' adventure, designed to help adventure novices and Tolkien non-afficionados be-

come acquainted with the nature of the full games.

The parser used in the



Apricot profits drop

APRICOT Computers, formerly known as ACT, has run into problems. The company's profits dropped from £3.8m in the first half of 1984 to £1.29m in the first half of

this year. Added to this is a £5.1m write-down of stock, due to disappointing sales of its portable machine, leaving the company with a £4.8m loss. Apricot has also announced 120 redundancies, about 100 from UK staff and a further 20 in West Germany.

game allows much interaction between characters, and enables the player to take the part of one of four people: Frodo, Sam, Pippin or Merry. It has a vocabulary of 800 words.

Commodore, Amstrad and BBC version are all expected before Christmas at the same price, although there will be no graphics with the BBC version.

Fleet Street goes home

MIRRORSOFT has launched *Fleet Street Editor* a page layout/newsletter creation program for the BBC.

The company intends to publish *Fleet Street Editor* eventually in a number of forms. Level One includes versions for BBC, Amstrad CPCs and Commodore 128, which Mirrorsoft calls the everyday level. These versions enable users to create text in a number of fonts, select graphics to illustrate it, and arrange it on an A4 sheet, then print it out.

Level Two will be based on MEDOS, and thus run on Apricots and IBM compatible machines. This will accept more sophisticated input and output and will directly interface with a phototypesetting system.

Level Three is designed for 68000-based machines, specifically the Amiga and Arari 520T, and will be a full photo-composition workstation.

The first *Fleet Street Editor*, the BBC version, will be released in January at a price of £39.95.

NAGALIKE-DOODLE
HAG XC
FOR ZX 1280/128

THE ULTIMATE PRINT UTILITY

POWERPRINT II

THE PROGRAM THAT
PRINTS ITS OWN
ADVERTIS.....

POSTERS MENUS TICKETS
BIRTHDAYS BADGES BANNERS PRICE TAGS
LABELS

WALL CHARTS
WINDOW TIGERS

INSTANT TYPESETTING
IN DOZENS OF EXCITING STYLES.
POWERPRINT 1010FT. X 6FT.
...EVEN ON ZX PRINTER.

FOR:

- * ZX PRINTER
- * ALPHACOM 32
- * FLOYD 40
- * TIMEX 2040

KEMPSTON £ TASMAN £ LPRINT III WITH: *EPSON 8008 *STAD 8013
 *SHRUIR *UP-80 *DEX/D58R *P80
 *CUBA *D80 *D10 *D12 *D16 *D18 *D20
 *D22 *D24 *D26 *D28 *D30 *D32 *D34 *D36
 *D38 *D40 *D42 *D44 *D46 *D48 *D50
 *D52 *D54 *D56 *D58 *D60 *D62 *D64 *D66
 *D68 *D70 *D72 *D74 *D76 *D78 *D80
 *D82 *D84 *D86 *D88 *D90 *D92 *D94 *D96
 *D98 *D100 *D102 *D104 *D106 *D108 *D110
 *D112 *D114 *D116 *D118 *D120 *D122 *D124 *D126
 *D128 *D130 *D132 *D134 *D136 *D138 *D140 *D142 *D144 *D146 *D148 *D150
 *D152 *D154 *D156 *D158 *D160 *D162 *D164 *D166 *D168 *D170 *D172 *D174 *D176 *D178 *D180
 *D182 *D184 *D186 *D188 *D190 *D192 *D194 *D196 *D198 *D200 *D202 *D204 *D206 *D208 *D210
 *D212 *D214 *D216 *D218 *D220 *D222 *D224 *D226 *D228 *D230 *D232 *D234 *D236 *D238 *D240
 *D242 *D244 *D246 *D248 *D250 *D252 *D254 *D256 *D258 *D260 *D262 *D264 *D266 *D268 *D270 *D272 *D274 *D276 *D278 *D280
 *D282 *D284 *D286 *D288 *D290 *D292 *D294 *D296 *D298 *D300 *D302 *D304 *D306 *D308 *D310 *D312 *D314 *D316 *D318 *D320
 *D322 *D324 *D326 *D328 *D330 *D332 *D334 *D336 *D338 *D340 *D342 *D344 *D346 *D348 *D350 *D352 *D354 *D356 *D358 *D360
 *D362 *D364 *D366 *D368 *D370 *D372 *D374 *D376 *D378 *D380 *D382 *D384 *D386 *D388 *D390 *D392 *D394 *D396 *D398 *D400
 *D402 *D404 *D406 *D408 *D410 *D412 *D414 *D416 *D418 *D420 *D422 *D424 *D426 *D428 *D430 *D432 *D434 *D436 *D438 *D440
 *D442 *D444 *D446 *D448 *D450 *D452 *D454 *D456 *D458 *D460 *D462 *D464 *D466 *D468 *D470 *D472 *D474 *D476 *D478 *D480
 *D482 *D484 *D486 *D488 *D490 *D492 *D494 *D496 *D498 *D500 *D502 *D504 *D506 *D508 *D510 *D512 *D514 *D516 *D518 *D520
 *D522 *D524 *D526 *D528 *D530 *D532 *D534 *D536 *D538 *D540 *D542 *D544 *D546 *D548 *D550 *D552 *D554 *D556 *D558 *D560
 *D562 *D564 *D566 *D568 *D570 *D572 *D574 *D576 *D578 *D580 *D582 *D584 *D586 *D588 *D590 *D592 *D594 *D596 *D598 *D600
 *D602 *D604 *D606 *D608 *D610 *D612 *D614 *D616 *D618 *D620 *D622 *D624 *D626 *D628 *D630 *D632 *D634 *D636 *D638 *D640
 *D642 *D644 *D646 *D648 *D650 *D652 *D654 *D656 *D658 *D660 *D662 *D664 *D666 *D668 *D670 *D672 *D674 *D676 *D678 *D680
 *D682 *D684 *D686 *D688 *D690 *D692 *D694 *D696 *D698 *D700 *D702 *D704 *D706 *D708 *D710 *D712 *D714 *D716 *D718 *D720
 *D722 *D724 *D726 *D728 *D730 *D732 *D734 *D736 *D738 *D740 *D742 *D744 *D746 *D748 *D750 *D752 *D754 *D756 *D758 *D760
 *D762 *D764 *D766 *D768 *D770 *D772 *D774 *D776 *D778 *D780 *D782 *D784 *D786 *D788 *D790 *D792 *D794 *D796 *D798 *D800
 *D802 *D804 *D806 *D808 *D810 *D812 *D814 *D816 *D818 *D820 *D822 *D824 *D826 *D828 *D830 *D832 *D834 *D836 *D838 *D840
 *D842 *D844 *D846 *D848 *D850 *D852 *D854 *D856 *D858 *D860 *D862 *D864 *D866 *D868 *D870 *D872 *D874 *D876 *D878 *D880
 *D882 *D884 *D886 *D888 *D890 *D892 *D894 *D896 *D898 *D900 *D902 *D904 *D906 *D908 *D910 *D912 *D914 *D916 *D918 *D920
 *D922 *D924 *D926 *D928 *D930 *D932 *D934 *D936 *D938 *D940 *D942 *D944 *D946 *D948 *D950 *D952 *D954 *D956 *D958 *D960
 *D962 *D964 *D966 *D968 *D970 *D972 *D974 *D976 *D978 *D980 *D982 *D984 *D986 *D988 *D990 *D992 *D994 *D996 *D998 *D1000
 *D1002 *D1004 *D1006 *D1008 *D1010 *D1012 *D1014 *D1016 *D1018 *D1020 *D1022 *D1024 *D1026 *D1028 *D1030 *D1032 *D1034 *D1036 *D1038 *D1040
 *D1042 *D1044 *D1046 *D1048 *D1050 *D1052 *D1054 *D1056 *D1058 *D1060 *D1062 *D1064 *D1066 *D1068 *D1070 *D1072 *D1074 *D1076 *D1078 *D1080
 *D1082 *D1084 *D1086 *D1088 *D1090 *D1092 *D1094 *D1096 *D1098 *D1100 *D1102 *D1104 *D1106 *D1108 *D1110 *D1112 *D1114 *D1116 *D1118 *D1120
 *D1122 *D1124 *D1126 *D1128 *D1130 *D1132 *D1134 *D1136 *D1138 *D1140 *D1142 *D1144 *D1146 *D1148 *D1150 *D1152 *D1154 *D1156 *D1158 *D1160
 *D1162 *D1164 *D1166 *D1168 *D1170 *D1172 *D1174 *D1176 *D1178 *D1180 *D1182 *D1184 *D1186 *D1188 *D1190 *D1192 *D1194 *D1196 *D1198 *D1200
 *D1202 *D1204 *D1206 *D1208 *D1210 *D1212 *D1214 *D1216 *D1218 *D1220 *D1222 *D1224 *D1226 *D1228 *D1230 *D1232 *D1234 *D1236 *D1238 *D1240
 *D1242 *D1244 *D1246 *D1248 *D1250 *D1252 *D1254 *D1256 *D1258 *D1260 *D1262 *D1264 *D1266 *D1268 *D1270 *D1272 *D1274 *D1276 *D1278 *D1280
 *D1282 *D1284 *D1286 *D1288 *D1290 *D1292 *D1294 *D1296 *D1298 *D1300 *D1302 *D1304 *D1306 *D1308 *D1310 *D1312 *D1314 *D1316 *D1318 *D1320
 *D1322 *D1324 *D1326 *D1328 *D1330 *D1332 *D1334 *D1336 *D1338 *D1340 *D1342 *D1344 *D1346 *D1348 *D1350 *D1352 *D1354 *D1356 *D1358 *D1360
 *D1362 *D1364 *D1366 *D1368 *D1370 *D1372 *D1374 *D1376 *D1378 *D1380 *D1382 *D1384 *D1386 *D1388 *D1390 *D1392 *D1394 *D1396 *D1398 *D1400
 *D1402 *D1404 *D1406 *D1408 *D1410 *D1412 *D1414 *D1416 *D1418 *D1420 *D1422 *D1424 *D1426 *D1428 *D1430 *D1432 *D1434 *D1436 *D1438 *D1440
 *D1442 *D1444 *D1446 *D1448 *D1450 *D1452 *D1454 *D1456 *D1458 *D1460 *D1462 *D1464 *D14

HAVE YOU MET...

Bad Barnum Trouble

YOU WILL IN...

ROCK'N WRESTLE



Letters

Out of reach

Can anybody out there help me?

I have an Amstrad 6128 and a Juki 6000 printer. Everything works fine. *Tip-Ex* is a thing of the past. The secret of the microelectronic revolution is not that the things are clever but that they're so cheap.

There is however a snag: the Amstrad will only send a seven-bit character code to the printer and there is a proper pound sign and several other useful things of reach on the daisy wheel.

Does anybody make a gizmo that sets the eighth bit to the printer when sent a code (say ESC + >) and then resets it for the next character?

I know other people who have trouble getting characters with codes above 127 to their printers and some of them have gear twice as smart as mine.

Does the fix exist?

Peter Ceresole
14 Medcroft Gardens
London SW14

A cult micro

Your assertion, that the Spectrum is not a good computer, is without foundation.

Most of the micros in your survey were sawn-off business machines, sporting tiny Basics. The exceptions were the QL, Enterprise and the Spectrum.

The major ingredient of benchmarks are *For-Next* loops and, as even the Americans (who invented Basic) now agree, the programmer should be able to:

- 1) jump out of a for-next loop.
- 2) alter the value of the loop counter.
- 3) depend on the value of the loop counter after the loop has finished.

The Spectrum allows all three. The BBC, for instance, allows none.

As a measure of a Basic's power, you should be able to use all the micro's memory with a single direct command or a simple program, eg, 1 Gosub 1. Garbage collection causes problems on micros like the Amstrads and the

BBC. The Spectrum simply never allows it to build up in the first place.

The Spectrum has the most efficient memory manager in the computer world.

Anyone who's learnt assembler (any chip) can instantly understand the flow of a Sinclair Basic program, and conversely, by the time the Spectrum owner has learnt Basic, s/he is half-way to learning machine-code.

Perhaps the Spectrum's greatest asset is that it is future-proof. It uses a single bank of 280 addressable memory (bank switching has no place in future chip use). Furthermore it has a fully documented Rom which teaches by example good assembler technique.

I program on a variety of micros but develop new ideas on the Spectrum.

It is a beginner's, all-purpose machine, which will remain a cult micro for all the right reasons.

Geoffrey Wearmouth
Stoke Newington
London N17



"How did Arthur Dent and Ford Prefect get into our business software, Pemberton?"

C64 changes

It was interesting to see an article by Tim Decker (September 19) concerning changes to the C64.

I have been doing something on similar lines but have extended it to the blowing of an Eprom containing the changes and the manufacture of an adaptor to convert the 28-pin Eprom to the 24 pins of the Rom it replaces.

■ anyone wants to know more perhaps they could drop me an SAE..

Robin Harvey
30 Wimborne Close
Coombe Glen
Glos

ATARI *Volume 4*
Smash Hits

Includes:
CHOP SUEY • FIRE CHIEF
• KISSIN' COUSINS •
• HIJACK!

At Last! Atari Smash Hits volume 4

ATARI 400/800/XL/XE-48K Cassette £9.95

48K Disk £12.95

Available from all good Atari retailers
or POST FREE from:

ENGLISH SOFTWARE

1 North Parade, Parsonage Gardens, Manchester M60 1BX
Tel: 061-835 1358

MIRRORSOFT

CHILDREN'S CHRISTMAS CRACKERS

THE GIDDY GAME SHOW

The Giddy Game Show is new, it's fun, it's for under 5's and their parents – and it's being broadcast nationwide by Yorkshire Television.

Each of the 26 programmes in the series features a letter of the alphabet – and we've taken the same approach with the software. Giddy, the tiny alien with a magic wand, and his friends Gorilla and Gus get up to all sorts of adventures in their quest for knowledge about our world!

There are four games – The Letter Game, The Jigsaw Puzzle, The Hungry Gorilla Game, and Princess Galaxena's Maze – all combining a lot of fun with learning about letters.


Full colour storybook and keyguide included.

To be published in November with full-colour storybook for BBC B/Electron and Spectrum, £9.95 tape, £12.95 disk (BBC only).



If you like
solving puzzles,
you'll love

CRACK IT! TOWERS

Home of the team that brings you Crack  puzzle magazine, Crack It! Towers conceals a magical secret within its walls. Players must solve puzzles to collect the seven golden keys needed to unlock the secret of the Towers – if they fail to solve a puzzle, they'll find themselves in the moat, and the less-than-alert could have their keys stolen by any of the castle's more unfriendly residents. But there's also the chance to gain bonus keys in the Maze of Skulls.

There are arithmetic problems, spelling games, anagrams, and mazes to negotiate – with different levels to challenge kids and adults alike!

To be published in November for BBC B/Electron and Spectrum
£9.95 tape, £12.95 disk (BBC only)

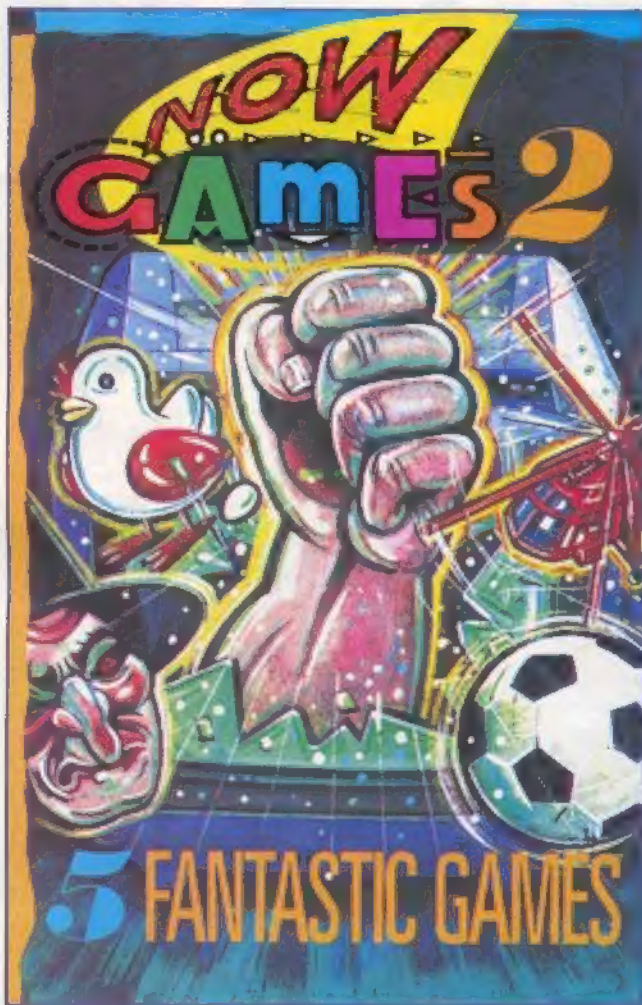
Mirrorsoft's Children's Christmas Crackers are available through BESA and other good software stockists. In case of difficulty or for catalogues and product information sheets on our range of children's software, write to:

MIRRORSOFT

Maxwell House, 74 Worship Street, London EC2A 2EN. Tel: 01-377 4644 (24 hours)
Trade orders: Mirrorsoft Ltd, Purnell Book Centre, Paulton, Bristol BS18 5LQ

Five Fantastic Games

Keep your eyes peeled for NOW GAMES 2. Five major software hits jostle for your attention on this packed-solid-with-fun cassette.



Now that's what I call value



STILL AVAILABLE - NOW GAMES

featuring
Lords of Midnight, Brian Bloodaxe, Strangeloop,
Pyjamarama, Arabian Nights and Falcon Patrol II
for only

£8.95

Available from all good software retailers

Also available directly from: Virgin Games Mail Order, 2-4 Vernon Yard, Portobello Road, London W11 2DX

Available for
COMMODORE 64 and SPECTRUM 48K
and for only

£8.95



1. AIRWOLF - Elite Systems Ltd
Stringfellow Hawke must use his helicopter to free five imprisoned scientists in this exciting arcade game which takes place in a subterranean terrorist base!



2. TIR NA NOG - Gargoyle Games
This remarkable interactive graphic adventure allows you to play the mythological Celtic, Cuchulainn, searching for the fragments of the Seal of Calum.



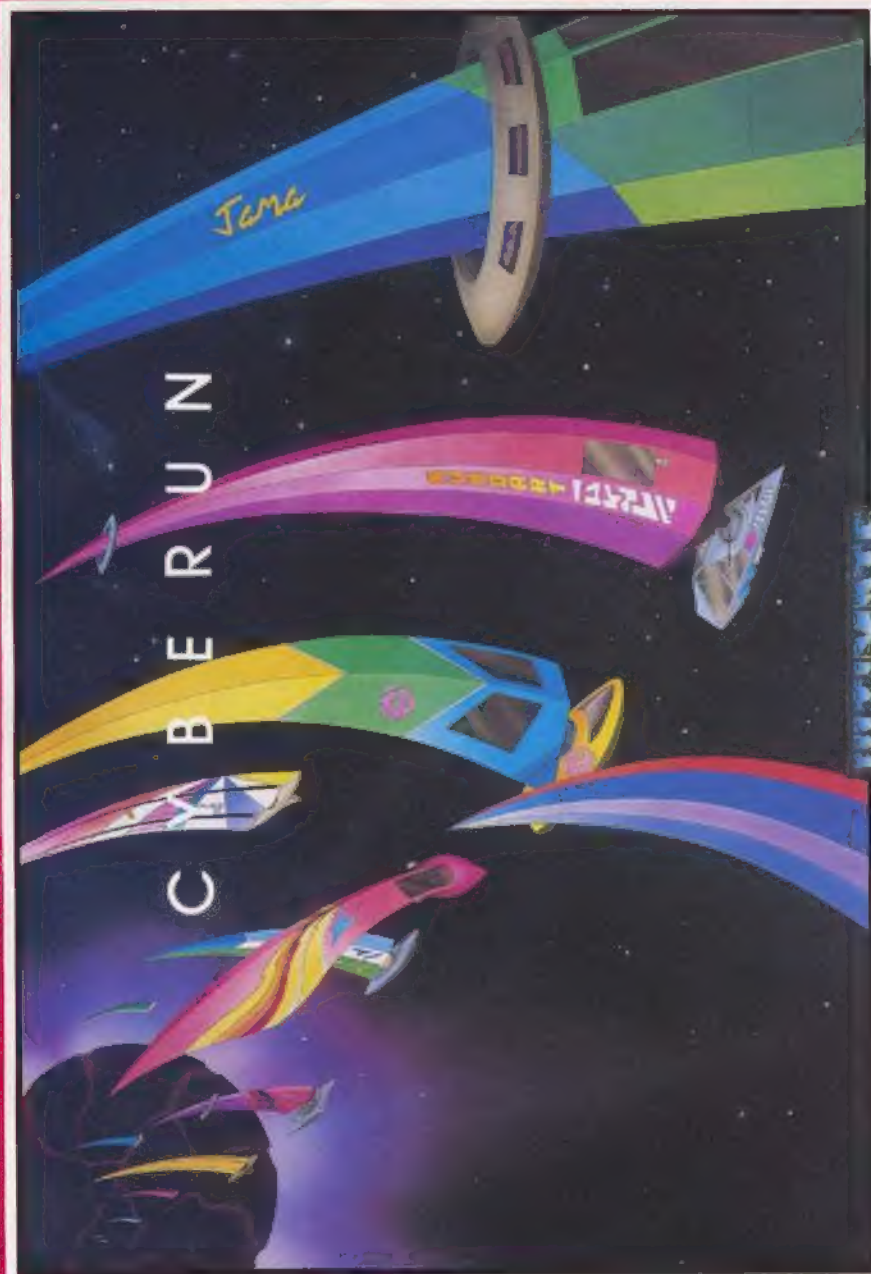
3. CAULDRON - Palace Software
Take up the vetches' challenge and unravel the mysteries of this beautiful land in this striking arcade adventure.



4. CHUCKIE EGG 2 - A & F Software
Help Hen House Harry in the smooth running of the A & F Chocolate Egg Factory! He must find equipment and find out where to use it in this amusing arcade game.



5. WORLD CUP - Artic Computing
This great football simulation lets you re-enact the tough fight to the World Cup Final. Play a friend or the computer (a pretty tough opponent)!

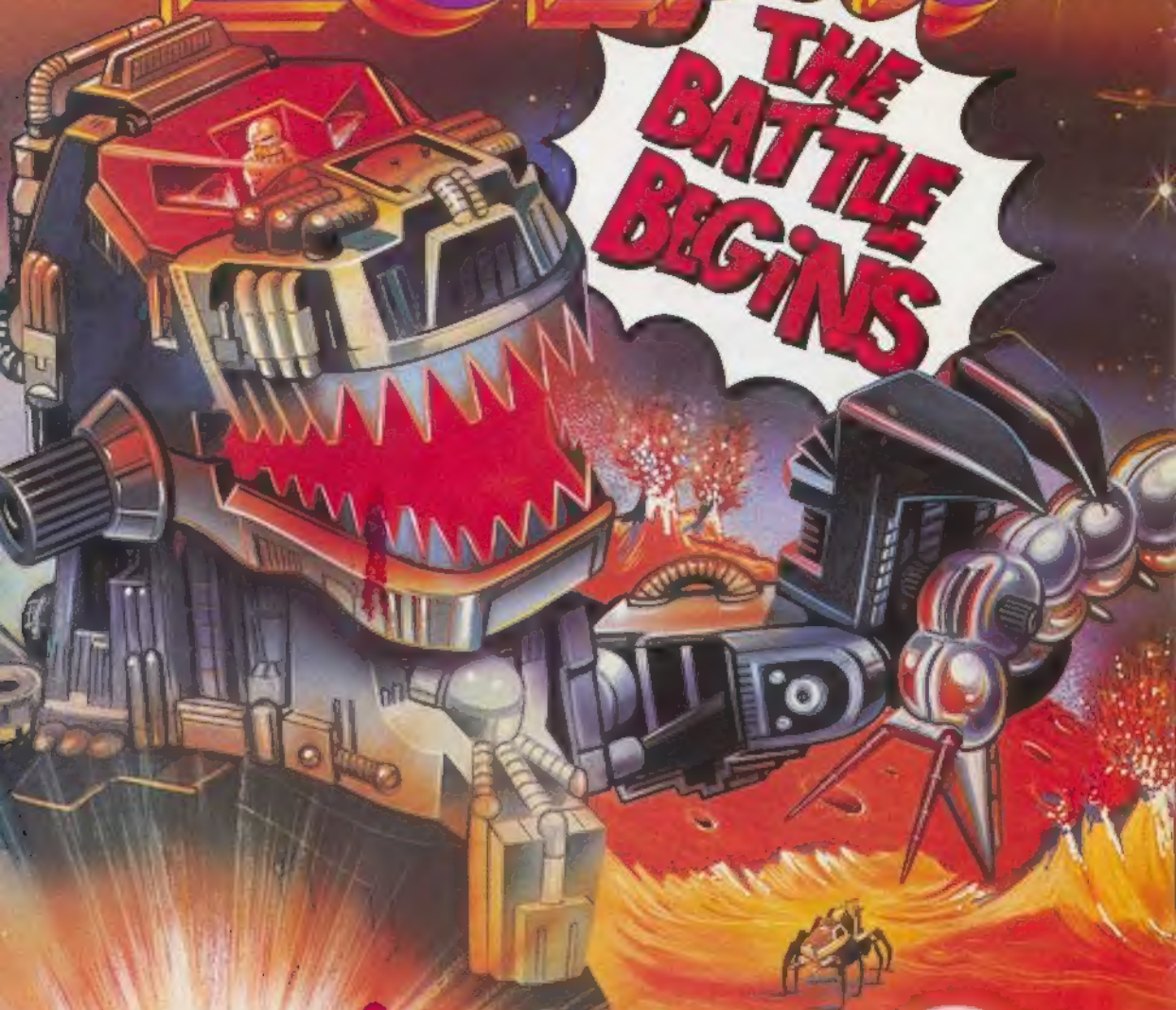


"CYBERUN" recommended retail price £9.95 inc VAT.

Available from W.H.SMITHS, BOOTS, J.MENZIES, WOOLWORTHS and all good software retail outlets. Also available from ULTIMATE PLAY THE GAME, The Green, Ashby-de-la-Zouch, Leicestershire LE6 5JU (P&P are included) Tel: 0530 411485

ZOIDS

THE BATTLE BEGINS



Zoidstar is gripped by war.

Blue Zoid fights Red Zoid in a merciless battle for supremacy.

Mighty Zoidzilla, Blue Zoid combat leader, lies dormant in the hold of your craft, ready for you to climb into its command capsule to merge minds with the powerful machine and take control of this bitter confrontation. Somewhere in the desolate landscape, the Red Zoids lie in wait!

Landing preparations are complete. The descent begins. The task which follows will take you to the very limits of your capabilities and Imagination.

LIVE THE GAME. BECOME THE MACHINE!

Cassette:	SPECTRUM 48K	£7.95
	ALL OTHERS	£8.95
Disk:	CBM 64	£14.95

Available from all leading software retailers
OR order today by mail. Prices include postage
and packing plus VAT.

martech

Martech is the registered trade mark of Software Communications Limited, Martech House, Bay Terrace, Pevensey Bay, East Sussex BN24 6EE
TRADE ENQUIRIES WELCOME.
PHONE: (0323) 768456
TELEX: 87465 EXQM Brighton

48K SPECTRUM • COMMODORE 64
BBC'B' • AMSTRAD • MSX • ATARI

TOMY

Beyond the blip

Graham Taylor looks at the new sound facilities



The noises your computer makes are becoming important. The casual blip to indicate variously, a key pressed, 'you can't do that', or 'the world has now exploded as a result of a cataclysmic atomic war', used to be enough for anyone.

Now everybody knows you beef up sales by a sizeable percentage by giving your product synchroflash multi-channel, get on down, fully-fledged music.

Real programmers don't care, of course, they occasionally moan about such irrelevancies as music being a tart on the meat of computer use, which is, of course, databases, accounts programs and number crunching as in 'let's just work out Pi to a few thousand places before lunch'.

Alan Sugar - well known computer aesthete and purist - is not, however, selling bundles and bundles of 8128s to real programmers, he's selling them to ordinary everyday people like you and I.

Music matters because a decent soundtrack on a game can give it meaning, drama and added excitement in exactly the same way that the soundtrack of a film functions. The first good example of this was *Ghostbusters* which, in its original Commodore 64 version, had a music track so good few reviewers spotted that the game wasn't really up to much - they didn't get past the funky opening credits.

Professional musicians now use micros via the Midi communications protocol to write, arrange and record - they give (in conjunction with all kinds of clever things that have happened in music technology recently) one lone keyboard player the opportunity to ma-

nipulate sounds limited only by the imagination and perseverance. You don't necessarily even need any music skills.

The hardware companies have hardly been oblivious to these developments and it's useful to look at some of the specifications for the newer machines and see how the musical facilities of the machines are changing and growing.

Sampling

A simple idea with fundamental effects. In the long run Sampling could effectively depose the need for musicians - including orchestras - completely. It works by turning a 'real sound' like a trumpet into digital information which can then be manipulated in virtually any way you like and played back at any pitch using a keyboard.

Quite a few programs already feature sampling of a simple kind - mostly it's speech saying something like 'kkkeal the ernemych'. At some point a real person said 'kill the enemy' into a microphone a few thousand times and that information was converted using an analogue to digital device. The reason it doesn't sound too good is partly to do

with 'noise' when the original recording was made and partly to do with the rate of sampling. The higher the rate the more accurate will be the sample, but more memory will be used up.

There are some simple peripherals for home micros which let you try your own sampling and a number of listings have been printed in this and other magazines which convert sound information fed in via a tape port into a digital form - the end result still sounds like a badly tuned-in radio, though.

However, things are changing, mainly thanks to Commodore. The Commodore 64 is shortly to get a Sampler with various sampling rates, clever things like harmonising and flanging and is Midi compatible. That means you will be able to play the sampled sounds from the micro on any Midi-compatible music keyboard.

The Amiga, also from Commodore, due some time early next year, promises to be the first micro with sampling of a quality equal to that of dedicated music machines built-in.

Commodore are describing it as Fairlight compatible (the Fairlight is the Cray of sampling machines) though what that means seems uncertain. Whatever else, though, the Amiga has some superb facilities. Commodore has already shown some demos of samples of such things as drums and pianos, but the crowning glory was a powerful electric guitar sound. Seeing *Smoke on the Water* played on the Qwerty keyboard is a sight I shall never forget.

More important still, the Amiga has the memory and hardware (four analogue-to-digital converters) to enable polyphonic sampling - that means chords.

Midi

Midi is a standard. An agreement between musical instrument manufacturers over electric standards which means that the keyboard of one machine can be used to play another or a drum machine can be synchronised with another manufacturer's synthesiser and so on. The important point for micro owners is that it is possible - indeed quite easy - to implement Midi on a micro.

A Midi equipped micro is, from a musician's point of view, a powerful tool. It means that the memory and programming facilities of the machine can manipulate the sounds of external Midi instruments. Thus a typical Midi software page might let you compose music on-screen, then manipulate that music in a variety of ways, somewhat like a wordprocessed document. The different music parts can then be assigned different Midi channels and played on a number of external instruments. It's really similar to the standard music packages you might find on a micro, but it lets you 'play' your music with real instruments.

The Atari ST has a Midi port as standard, but no software as yet to support it.



Micro Music Power

Even more interesting, the Spanish Spectrum 128 also has a Midi port and there is every reason to think the British version will have one too.

steps). This has proved adequate for the average game, creating explosions, zaps and jangly little tunes whilst you're playing.

However, people are starting to want more. The Sid chip, found in the Commodore 64, has somewhat better facilities than the norm despite having only three channels. For one thing it has a filter which makes things a lot more interesting because it dramatically increases the range of sounds available; it can also synchronise sounds and do other clever things. The Sid chip is arguably the single feature that distinguishes Commodore 64 titles from those of other machines - they sound better. In fact, some recent programming of the Sid chip, notably by Ron Hubbard, has produced very impressive electro-disco music with wailing guitars and electronic drums.

The Sid chip is leading the way to considerably more powerful on-board chips. So far the only real example is Yamaha's CX5 which has eight-channel synthesis, based on the FM system Yamaha use in the now semi-legendary DX7. The CX8 has recently been reduced in price to £299 complete with mini keyboard.

The Amiga uses a special four-channel arrangement which can create sounds of astounding complexity. The reason is

that the concept of sampling extends to the creation of the waveforms themselves.

Thus instead of taking the sound information from an outside source (sampling) and representing it digitally, you can feed in the digital information directly and create the sound forms out of a string of numbers. These are then fed through the analogue to digital converters and output through the stereo channels as sound.

Commodore are bringing out an FM sound device as an add-on to the Commodore 64 which will give it eight voices and 16 preset sounds of high quality. Later software will allow you to edit those sounds and sequence them.

The important thing about all these developments is not, primarily, the scope the micro gives and will be giving to musicians. The important thing is what it will do for games, which, despite all grumbles to the contrary, still form the main reason that people buy and continue to use micros.

The Amiga, for example, is perfectly capable of running a complete music soundtrack using voices indistinguishable from 'real instruments'. Once you've tried a flight simulator with sampled 737 engine noises that respond to the power level, you'll find a three-channel buzz pretty unexciting...

A Sinclair machine with Midi is an exciting prospect because it will bring this facility in as a standard on a low-cost micro and in so doing will encourage other manufacturers to follow suit. The Amiga does not have a Midi port as standard, but will have an add-on music keyboard, software and Midi package available shortly after its launch.

Synthesis

The average sound chip, found in say the Amstrad and BBC, is three channel. Each of those channels consists of an oscillator with a number wave forms and an envelope generator to define the shape of each sound (how quickly it starts and

HAVE YOU MET...

Flying Eagle

YOU WILL IN...

ROCK'N WRESTLE



AMSTRAD INTERFACES

THIS IS NOT JUST A MODEM, BUT A COMPLETE SYSTEM NOTHING ELSE TO BUY

★ ★ MODEM ★ ★
★ ★ £153.00 ★ ★

Interfacing your Amstrad to a telephone line, this modem allows you to send and receive data at 300, 1200, 2400, 4800, 9600 and 19200 baud. It also features a built-in auto-dialling facility, a 16-character display, and a 16-character memory. It is compatible with all Amstrad computers and is the only modem of its kind to be designed specifically for the Amstrad range.

NOW WITH LATEST SOFTWARE INCLUDES FREE SUBSCRIPTION TO MICROLINE

★ ★ SIDEWAYS ROM ★ ★
★ ★ £26.05 ★ ★

This is a collection of 16 small games, including a version of the classic game 'Snake'. It is compatible with all Amstrad computers and is the only collection of its kind to be designed specifically for the Amstrad range.

RS232

Interfacing your Amstrad to a telephone line, this modem allows you to send and receive data at 300, 1200, 2400, 4800, 9600 and 19200 baud. It also features a built-in auto-dialling facility, a 16-character display, and a 16-character memory. It is compatible with all Amstrad computers and is the only modem of its kind to be designed specifically for the Amstrad range.

£34.75

PARALLEL PORT

Interfacing your Amstrad to a parallel printer, this port allows you to send and receive data at 300, 1200, 2400, 4800, 9600 and 19200 baud. It also features a built-in auto-dialling facility, a 16-character display, and a 16-character memory. It is compatible with all Amstrad computers and is the only port of its kind to be designed specifically for the Amstrad range.

£22.57

8 BIT PRINTER PORT

Interfacing your Amstrad to an 8-bit printer, this port allows you to send and receive data at 300, 1200, 2400, 4800, 9600 and 19200 baud. It also features a built-in auto-dialling facility, a 16-character display, and a 16-character memory. It is compatible with all Amstrad computers and is the only port of its kind to be designed specifically for the Amstrad range.

£17.35

All units are cased and have through connectors
• Please add VAT •

Dept PCW 15 Hill Street, Hunstanton, Norfolk

PE36 5BS

Tel: (04853) 2076

FD492

COMPUTER HARDWARE & SOFTWARE

KDS

ELECTRONICS

Moving up to 16-bit

Christina Erskine talks to Tony (ex-Firebird) Rainbird

A lot of people were surprised at British Telecom's first foray into the computer software market - unassuming £2.50 budget games. Firebird's product seemed rather down-market given the high tech, go ahead, image BT was promoting at the time of its privatisation.

Yet going up-market was always planned and a month ago, Rainbird was launched. This completes a trinity of software divisions, following as it does, the acquisition of Beyond.

Rainbird is being launched and established by the eponymous Tony Rainbird, who was also a co-founder of Firebird. His brief is to produce sophisticated titles on more machines, leaving budget hits on 8-bit micros to Firebird. The new division currently numbers four staff: Tony, as operations manager, Mike Anderiesz as advertisement manager and Steve Porter and Tony Gibson, project managers.

Tony is particularly interested in developing programs for the 68000 processor based micros, such as the Apple Macintosh, Atari ST, Amiga and the QL.

"This means we'll be doing things

over a much longer time than Firebird - everything will be with a view to the future," he said.

At first sight Rainbird appears a risky, though exciting venture. After all, all the four machines named above have yet to prove themselves in this country; is it really a profitable project?

"Well, there's less risk than you might think: we want to concentrate on the processor rather than a specific machine, and of those four at least one will succeed.

"In fact, I'm expecting us to become profitable very soon because it simply isn't practical to concentrate only on developments for the future micros," he said cheerfully.

"Besides, our range is already wider than that. We have projects in progress for 8-bit micros too - the *Music System* and the *Advanced Music System* for the Commodore, and the *Art Studio* for the Spectrum. These are being converted to the Amstrad CPC micros, and the *Art Studio* also for the Commodore.

"On the adventure side, we will be releasing *The Pawn*, which is being written by Magnetic Scrolls, on the 68000 micros. Magnetic Scrolls is converting the parser used for the popular 8-bit machines as well.

"But our target for the 16-bit machines is still entertainment - we're not interested in spreadsheets and so on just yet. We will have a combination of adventure, simulation and strategy, and also what I can only really term 'megagames' - I can't think of a better word to describe them.

"For example, one project we have underway is *Reach For The Moon*.

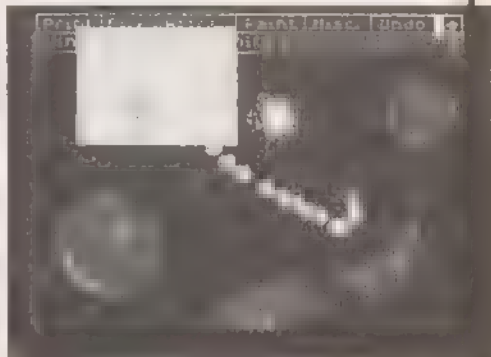
It contains an

icon driven 'decision maker', eight text and graphic adventures, and a vector graphic flight simulator, all in the one program."

Tony hopes that Rainbird will be able to release about one title each month in 1986.

Prices will inevitably be quite high, but according to Tony, "we'll price according to merit and, of course, the development costs."

In some respects, Firebird, Rainbird and Beyond will all be competing against each other with titles of a similar quality;



although New Information Services, the division of BT which holds all three, will ensure that the trio never, for example, bid against each other for the same licensing rights.

Rainbird will also work very closely with BT's newly set up software arm in the US, Firebird Licensees Inc.

"A good proportion of our product will be suitable for the American division, and a smaller proportion of that from Firebird and Beyond. The *Music System* is to be released over there, as is *Elite*."

Tony reckons a priority for the US is products for the Atari ST.

"They've sold between 50,000 and 60,000 over there, so it's going quite nicely. I reckon there'll be quite a few around in this country by next Christmas as well."

Plans are also afoot to export the other way - into Europe. The *Music System*'s manual has been translated into German in readiness.

Rainbird is certainly a far cry from Tony's first micro venture. "I was a warehouse supervisor, writing games and setting up a label called Microgold in my spare time.

"There were five budget titles for the Vic 20, three of these games I'd written myself.

"The duplication, sticking the labels on cassettes, folding the inlay cards and selling directly to the shops was all done by me.

"Then British Telecom bought the product rights, I applied for a job to go with them, and ended up helping to launch Firebird."



**This is the only
warning you'll get.
They're coming soon.**



六神龍白虎

NEW FROM FIREBIRD. THE HOT RANGE





"What's that picture supposed to be?"

"Er, eye-catching, that's what it's supposed to be."

"But it doesn't tell you anything about the great new icon-driven Battle of Britain strategy game, **THEIR FINEST HOUR**, from Century Communications, publishers of **THE FOURTH PROTOCOL**. I mean, what's it got to do with using your skill and judgement to stem the almost inexorable advance of Goering's Luftwaffe? Does it tell you anything about the deployment of Spitfire squadrons and ack-ack batteries, the allocation of fresh pilots, or keeping in touch with the weather forecast? How about the daily reports you have to make to Winston Churchill, and the pulse rate feature where you control the speed of the game?"

"Well, er ..."

"Right, we'd better hurry up and design a new ad before the game hits the streets on 9 December, and people start writing to and phoning Century Communications at 62-65 Chandos Place, London WC2N 4NW. Tel: 01-240 3411 and asking for copies."

THEIR FINEST HOUR

John Wilson
and Nicholas Palmer



... all the excitement
and tension of the
Battle of Britain

THEIR FINEST HOUR



Their Finest Hour — a great strategy game simulating
The Battle of Britain, by Nicholas Palmer and John Wilson.
Published by Century Communications for the 48K Spectrum at £9.95.

48K Spectrum

Lukewarm

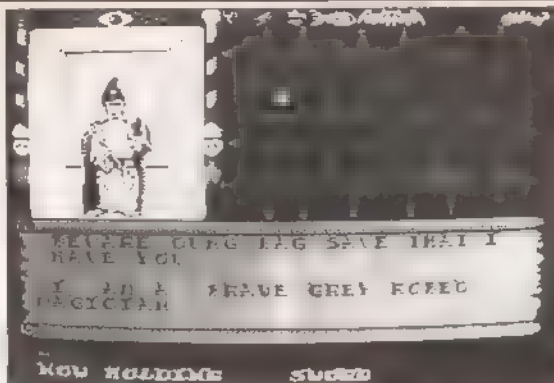
Program *Swords and Sorcery* Micro Spectrum 48K
Price £9.95 **Supplier** PPS, 452
Stoney Stanton Rd, Coventry
CV6 5DG.

It's been a long time coming and not surprisingly we all hoped for something special.

Opinions differ wildly on the final results. One person I know would put it at the top of his Program of the Year list without any hesitation.

I belong to the other camp. While I admire the hard work in programming *Swords and Sorcery* - and the Midas operating system which drives it - my overall reaction is lukewarm.

Perhaps I expected too much but after 12 months of promises of micro role playing, I'm sad to find the reality



less like *Dungeons and Dragons* than I'd hoped. One immediate problem is the design of the enclosed dungeon, which is rich on rooms but low on atmosphere. The succession of chambers (each with its own monster, most of which have to be fought as they don't respond to the excellent Talk

option: 'Hello, Mr Snake' doesn't get you very far) is hardly inspiring and I'd question the importance of the 3D graphic when all they produce is bland line drawings that suggest nothing more than an NCP car park.

On the other hand the series of menus and sub-menus that guide all but

your movements take no time to learn and then work very smoothly. Even so, other aspects of the display can be confusing, and at times I was unsure just what was going on. Another aspect of role playing is maintaining the logic of the game and so I couldn't see why I was allowed a map of a quarter of the level with the positions of wandering monsters marked.

So, though the game gives you the ability to train your own character in various skills, I found myself unable to empathise with him and get into the spirit of the adventure.

Perhaps the Midas system will improve as better environments become available, but at the moment it lacks the human level of playing another character.

It is all too schematic.

John Minson



Numbers

Program *Supercalc 2* Micro Amstrad CPC 8128/PCW 8256 (CP/M+) **Price** £49.00 **Supplier** Amsoft, Brentwood House, 168 Kings Road, Brentwood, Essex CM14 4EF.

I must admit that I scoffed at the idea of providing CP/M on home computers. One of my principal doubts was that a vast proportion of the software available carried enormous

prices worldwide. Now for a lowly £49 you too can run the very same thing to keep track of your home budgeting. I'm still not entirely convinced that this means that owners of the 6128 should therefore ignore the best of the cheaper software such as *Mastercalc* but it is something to think about. Perhaps more importantly it makes the 8256 even

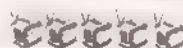
more viable as a real low-cost business system.

Unusually for a heavy-weight CP/M release, it runs quite well on only one drive. Features offered include complex and very comprehensive formula options, the ability to merge several small sheets into one large one, a utility to convert files from another program into

Supercalc readably and vice versa, calendar functions, user-defined screen formats, windowing, text look-up tables (for details not shown on screen all the time) and the ability to 'hide' selected cells.

Take my word that it can't be faulted.

Tony Kendle



A yardstick

Program *Yie Ar Kung Fu* Micro BBC/Elctron **Price** £8.95 **Supplier** Imagine, 6 Central Street, Manchester

Not too long ago Bruce Lee, complete with flying feet and fists, was king of the silver screen. But, like many crazes, the popularity of kung fu slowly faded. The micro revolution has stimulated new interest in this most noble way of beating your opponent senseless. One fine example of a kung fu program is *Yie Ar* from Imagine.

Your function in this game is to control the actions of the kung fu master Oolong. By using keyboard or joystick you can execute over a dozen combinations of jumps,

kicks and dodges.

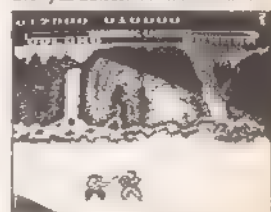
Oolong's first opponent is a 20 stone tank named Bucha. A chest high head butt is one of this guy's favourite moves. The second opponent is rather more difficult to dispose of. In keeping with his name, Star, he launches a constant barrage of spiked missiles. Getting close to him is difficult, putting him down is even worse.

Nuncha is the third adversary, armed with two lengths of wood joined together by a chain. Once he gets that thing whirling your best bet is to keep your head down and go for the shins.

On level four your opponent is a little man with a big stick. This honourable gentleman is intent upon giving you indigestion. I reached level five and was stood waiting for my next opponent to appear when I was suddenly accost-

ed by a swarm of flying teapots. These 'feedles' were my downfall every time, no matter how I tried I just couldn't kick sufficient of them to reach the next level.

The graphics are excellent, each character's movements being tailored to his own particular discipline. This combined with the wide variety of opponents will make *Yie Ar* the yardstick to which other



manufacturers' offerings will be compared.

Hannah Frances



price tags, explained away by the need for 'dealer support', etc, that surpassed the cost of the computers themselves. Now I have to eat my words, as Amstrad, and certain other dealers, have been remarkably successful in negotiating price cuts of important releases.

Supercalc 2 is probably one of the top five best known names in the business software world, used by compa-



Little person

Program *Little Computer Person* **Micro** Commodore 64 **Price** £14.95 **Supplier** Activision, 15 Morley House, London NW1.

Dear Friend, I am going to be very busy in my new home, so please don't think I am being rude by ignoring you, it's just that there's so many things to play and do, they will take up all my time. Please remember to keep me fed and top up my water and I'll want for nothing else.

Love,

Maxwell."

Billed as Activision's biggie for Christmas, this was how my little computer person introduced himself and his dog to me, and after moving in and having a good look around, he got down to the real business of his life - that of playing games, talking to his friends on the telephone, dancing, playing the piano and exercising.

David (*Ghostbusters*) Crane who masterminded this concept says that each little person sold will have a different name and possess his/her own particular characteristics - shy, extrovert, musical, etc.

I must admit that he is start-

ing to bore the pants off me.

This is not a game, but an exercise in observation and however much Activision promote it as being a real live person inside your computer, it has the obvious limitation of memory and soon becomes repetitious ■ the extreme.

What you see on screen is a 2½ storey house with all the mod-cons, ie. TV, hi-fi, bedroom, kitchen, lounge etc. and after the initial 'moving in' sequence, which only happens the first time you load up, your little friend flutters around the house at random, ie. playing the piano which utilizes the 64's excellent sound system (and up to now I have heard five different tunes), dancing, listening to records, playing cards and typing letters to you which is his only means of communication to humans.

Using the keyboard, you can type in commands and ask him to do things which may or may not happen.

The attention to detail in the house ■ excellent, there is even a clock on the wall which keeps perfect time from the moment you type it in at the beginning of each session.

He will go to the toilet at regular intervals, conveniently shutting the door first

and flushing of course, and makes himself meals, washes up and even cleans his teeth afterwards - a nice touch.

Playing cards with him is a bit of a let down, you get two choices of game, poker or card war, and a game of anagrams is thrown in as well, but this ■ not new and the card information in fact replaces the top half of the house which is quite disappointing.

My five year old daughter instantly fell in love with Max and happily played with him for a couple of hours until she lost interest with watching him go through the same sequences again and again.

Concept - totally new; presentation - brilliant; graphics and animation - superb; sound - excellent; but lasting interest? - no way. What Activision needs to do, if it's possible, is use this as a base module and introduce additional programs to it, giving your man a friend to live with or change the scenery maybe.

As it is, I'm afraid poor Max will be left to live in my daughter's bottom drawer.

Andy Moss



Boiling point

Program *Chemical Formulae* **Micro** Spectrum **Price** £9.95 **Supplier** Eclipse Software, 79 Ardrossan Gardens, Worcester Park, Surrey KT4 7AX.

I don't know about you but drawing up equations was the bane of O-level chemistry for me. All that time spent looking things up in the Periodic Table, then trying to make things balance. And I usually got it wrong.

Now Eclipse has produced a program that contains a database of elements and ions, which will produce information on formulae, valencies, structures, atomic numbers, and melting and boiling points; more importantly it will calculate formulae, so if you want to know the low down on Potassium Cyanide, just type it in.

It's mainly menu driven and despite being written in Basic works quickly enough. You have to be accurate within certain parameters when naming the elements and ions, but these are quite clearly spelled out in the instruction booklet, which also provides a brief introduction to the topic.

While hardly glossy in presentation, ■ is serviceable and along with the rather high price this can be excused by the program's specialist nature.

The Basic is unprotected but it's easy to rescue if inadvertently crashed.

There's little more to say. If you need such a program and don't balk at the price this should suit, despite a general lack of chrome. It's also good to see the Spectrum used for something other than alien bashing.

John Minson



Go ape

Program *The Evolution Micro* **Spectrum** **Price** £6.95 **Supplier** ErnieWare, Postbus 2353, 6201 DB Maastricht, The Netherlands.

I don't know about that much heralded/bemoaned American invasion but nowadays there's a fair amount of continental software around, what with French pinball machines and Spanish boxers. Now it's Holland's chance to get in on the act and ErnieWare tells us that *The Evolution* will be available over here before Christmas.

Despite its missing link cover and instructions full of talk of 'acts', this turns out to be none other than that old - and I do mean old - friend, the computerised cube. A six by four grid of numbers is 'rotated' until the original or-

der is totally scrambled. You have to shift the rows and columns back again. Completes thus within a certain number of moves and time limit and you move on to the next stage or 'act'. Difficulty levels are defined by limitations on which way the columns can move and at their hardest these make a complex task totally frustrating.

The game itself is fine if you like that sort of thing and while those of a coolly logical mind will sail through it, others will end up tearing their hair. But no way ■ it going to scare the producers of the big Christmas games and at the proposed price it's far too expensive for this sort of game. One can only presume that the Dutch software industry isn't so well developed as some of its European counterparts.

John Minson



F.A.B.

Program Thunderbirds Micro Spectrum Price £3.95 Supplier Firebird Software, Wellington House, Upper St Martin's Lane, London WC1.

Cue an excellent rendition of the Thunderbirds March. "Scott, Virgil, An emergen-

cy. A team of archaeologists have crept into a crypt and gotten themselves trapped."

"Serves 'em right." "You'll need Thunderbirds One and Two."

"Aww, no - I was gonna take TB One drag racing today."

"There's money in it. The catacombs are alive with treasure."

"And monsters too. Betcha." "Okay, there may be the

odd monster. But you can equip Thunderbird Two from the whole range of tools before you go... at cost plus 25%."

"How about a pair of scissors to cut the monsters' strings?"

"Now these caverns from a giant maze..."

"Bor-ring!" "Not so. Some passages are only of a size to take one craft or another, which means you'll need to co-operate."

"I'm not co-operating with him, after last time."

"Well, you'll have to, to clear passages by shifting blocks, most of which only one craft can do. Then there are sections with specific problems. It really takes thought."

"That rules out ole' wood-enhead here."

"It's really more of an abstract problem."

If you like abstract strategies then you'll probably love it.

John Minson

Spelling test

Program Tas-spell Micro Any Amstrad Price £16.50 Supplier Tasman Software, Springfield House, Hyde Terrace, Leeds LS2 9LN.

As a naked word processor, *Tasword* Amstrad has recently received some extremely stiff competition with the release of *Arnor's Protext*. However, the disc versions of *Tasword* are still the best value all-round package for the Amstrad range with mail merge facilities, the *Tasprint* text-redefiner program, and now *Tas-spell*.

Tas-spell is self evidently a spelling checker and is only accessible via a menu option of the disc releases of *Tasword* itself. It is not a 'stand alone' package. The program contains a disc with a dictionary of over two thousand words, all with the English spelling and 45K free for you to add ones of your own.

It is extremely simple to use, reading through the text currently held in memory comparing it with the dictionary data. Unrecognised words are highlighted, in context, and you are given options to ignore the word, or Change the word that you habitually mis-spell.

An irritating feature is that it constantly throws up names, initials, etc. You would be well advised to add your name and address to the dictionary. Also it makes contextual mistakes such as 'its over their' but that is a flaw with all spell checkers and no reflection on *Tasword*.

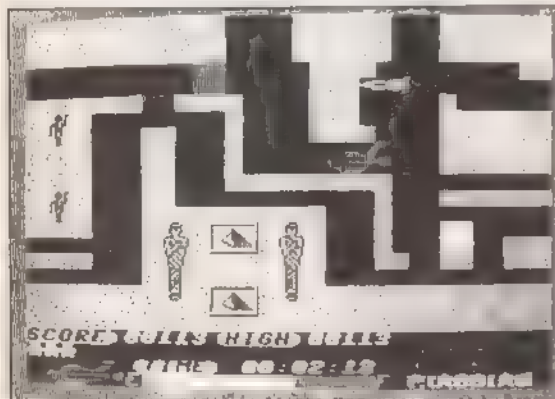
On the whole, though, it is an essential utility for anyone who has to produce important and correctly spelt documents.

Tony Kendle

paddle as a 'steering wheel' if desired... good thinking by somebody.

The most challenging and addictive game to hit the Commodore for quite some time. You'll love it.

John Cook



Patterns

Program Willow Pattern Micro Amstrad Price £3.95 Supplier Firebird Software, Wellington House, Upper St Martin's Lane, London WC2.

Yes Grasshopper - san, it is time for you once again to defeat the forces of wickedness in the guise of Ta Jin, a wicked merchant who plans to marry

tains some pleasant water music to accompany the action (all water music grates after a while and this is no exception).

Still, what about the game - it's the usual maze variety with a number of nicely animated guards who throw swords ■ you if you venture too near, but pass them, wait till they throw the knife, dodge it, pick ■ up and throw

it back at them.

Once the princess is rescued you have to run back through the maze and on to a boat whilst being pursued by the enraged merchant.

Not as good as some of the other silver range, but, nevertheless a pretty good Japanese take away.

Andy Moss

Rrum rrum

Program Revs Micro Commodore 64 Price £14.95 (tape) £17.95 (disc) Supplier Firebird Wellington House, Upper St. Martin's Lane, London WC2H 9DL

Whenver I hear people moan about the standard of BBC B software, I point them in the direction of that now classic from Acornsoft, *Revs*.

They invariably come back delighted or disappointed depending on what machine they own.

Now *Revs* has been converted to the Commodore 64,

marketed by those bastions of private enterprise, Firebird.

The 64 version is completely faithful to the original in layout and design, and at times you'd be hard pressed to guess which machine it was running on. Admittedly, there are slight differences... the corners seem a touch more angular compared to the original, and the striped kerbs at the side of the track don't zoom by quite so fast, which for me removed a little bit of the drama and atmosphere. But not picking apart, the gameplay is virtually identical... and you get two tracks, Silverstone plus Brands Hatch.

A nice touch allows the use of the Commodore games



Princess Koong Shee. You enter the Mandarins' Palace, defeat his sword throwing Samurai and rescue her.

So begins the *Willow Pattern* - a pretty maze game from Firebird's budget range. Although a bit lacking on actual game play, the program makes good use of the Amstrad's colour and con-

MS-2000 Mouse

Hardware MS-2000 Mouse Micro
CBM 64 Price £89.90 Supplier
 Wigmores House, 32 Savile Row, London
 W1X 1AG.

As mouse/icon/window systems become more popular, no doubt prompted by the success of the Apple Macintosh's operating system, more and more micro owners will discover the joys of using these user-friendly devices. The MS-2000, based on a product for the BBC-B, is by far the best such package for the CBM 64 so far.

The MS-2000 is comfortably small, wedge shaped, and has two oblong click switches on its nose. It connects to the 64's joystick port by a standard 9-pin D-plug. Beneath the mouse is the non-slip rubber ball, and inside, the opto-electric circuitry which gives a movement resolution of 100 points to the inch.

Like all mouse systems, the MS-2000 works by being rolled over a flat table surface, and moves a control symbol over a selection of command icons on the screen.

In the case of the MS-2000, the software supplied with the package is called



Line, Circle, Square and Fill routines

Cheese. It's a hi-res design program which enables you to utilise the powerful graphics abilities of the 64 without recourse to the awful CBM Basic.

On loading the software from cassette, you are presented with a blank screen with a selection of icons at the bottom. Rolling the mouse around moves a pencil-shaped cursor over the design area. This cursor changes to an arrow shape when it passes over the command icons. A numerical readout on the bottom left of the screen gives you the cursor's precise location, making exact positioning easy.

To select a function, you merely place the cursor over the desired icon, click the right-hand mouse button, and move the cursor to the drawing screen. I must say that the software is brilliantly programmed: all the graphics facilities are fast, smooth and precise. There are three lots of icons to select from, the two hidden pages are brought up by clicking on the mouse icon.

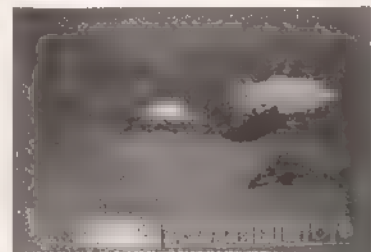
Graphics facilities include freehand

draw, which is very fast and responsive; dotted line draw; straight line draw, which allows you to set a point, extend a line from it and click the button again to draw the line; a very fast circle/ellipse facility, open or filled; equally good square/rectangle drawing; paint, a very fast and efficient fill routine; three selectable "pencil" thicknesses; an excellent "air-brush", which allows you to "spray" large areas, either in solid colour or in any one of a selection of 32 patterns.

You have a choice of all 16 colours for the cursor or paint, (unlike some packages, such as the Dater Mouse, which limit you to two colours on the screen at any time). Your current drawing colour is indicated by the border colour.

Should you make a mistake at any time - for instance, allowing a fill routine to leak all over the screen by leaving a box open - you can delete the last action by clicking on the "Cat" icon.

Having drawn your basic design or pattern, there are various high-level options to modify it. You can define a box and copy the contents all over the screen; set up a line of symmetry so that patterns reflect in the horizontal, vertical, or diagonal axis, or any combination; you can change the background colour; scroll the drawing area; get at extra space; zoom in on a small area to make corrections to individual pixels;



Free-hand Draw, Pencil and Airbrush

print your design out in black-and-white on an MPS printer; and save it to cassette.

If it isn't already obvious from the description of the facilities, I must say that I found the MS-2000 wonderful to use; the hardware is excellent, the soft-



ware technically stunning and well-thought out, and the graphic effects you can achieve, even if you have no real drawing skill, are extremely impressive.

Three minor quibbles, two of which should be dealt with by forthcoming software releases from Wigmores House. Firstly, given the notorious slowness of Commodore cassettes, a disc option would have been nice; apparently both disc and Rom versions of the software are on the way.

Secondly, the lack of any text input option makes the *Cheese* software more suitable for pure graphic design, rather than for applications such as drawing bar charts or circuit diagrams. Forthcoming software will allow you to use a number of text fonts in your designs. There are also hints of other, more general, Windows/Icons/Mouse software to come.

Thirdly, unlike some packages such as *Koala Pad*, it's not possible to remove the icon menu from the screen to leave the bare graphics. However, this is a minor point since the menu takes up very little space.

The MS-2000 package, which comes with a helpful, clear manual, is certainly one of my favourite 64-compatible products ever.

As a bonus, powering up the micro with the mouse's left hand button held down allows you to use the MS-2000 as a "joystick".

If you can possibly scrape the money together, do so - letting your creativity flow through the mouse is much more satisfying than zapping any number of aliens.

Chris Jenkins

Data Protection

by Jonathan Darks

escape if it contains such information as occupation, home telephone number, date of birth, etc.

All right, most impressive, but what relevance does it have to the home computer user? In my own case using a computer to record patient details, the need for confidentiality are obvious, but what about the enthusiast who keeps a membership/mailling list for the local squash club or amateur dramatic society? Not very exciting information perhaps but it will probably contain at least a name and address, home, and perhaps work telephone numbers (and therefore a clue to occupation), and maybe even a date of birth. There are very few exemptions to registration. Quote: Personal data held by an individual and "concerned only with the management of his personal, family or household affairs or held by him only for recreational purposes". Such users are unconditionally exempt from registration.

Examples of conditional exemption include, Quote: "data held by unincorporated members clubs relating only to club members" and "data held for distribution of articles or information to the data subjects and consisting only of their names and addresses". Note, these last two are examples of conditional exemption. The data subjects concerned must be consulted as to whether they object to the information being kept and must be consulted before any data is disclosed.

How then best to protect the data and, of course, yourself? Basic security is fairly obvi-

ous, don't leave discs or tapes lying around and, proud as you may be of your latest all singing and mail-merging database, be careful who you demonstrate it to! Remember also that computer generated material is just as important so tear up those yards of printout before you chuck them in the wastepaper bin. Finally, make sure you are not the subject of that fascinating test case that's bound to occur before long, you can obtain full details of the act in (it is claimed) simplified form, for free, from: The Data Protection Registrar, Department 1, Springfield House, Water Lane, Wilmslow, Cheshire SK9 5AX.

Program

And now my own own small contribution to data protection. The following program, designed for use with a disc drive, will scramble ASCII text or program files, including Tasword files, and will cope with most files containing mixed numeric and string data produced by the Amstrad (not Masterfile files unfortunately, as these are in binary format). It accepts a code word of any length (letters only, these are converted to upper case for processing) and for the more paranoid thus need not appear on screen. Then the ASCII value of each letter in turn is added to that of successive characters in the data file cycling repeatedly through the codeword until the whole file is scrambled. To unscramble the process is reversed. Written in Basic, the scrambling process takes a short while to complete, but any number of files can be selected for sequential processing.

The Data Protection Act is in the process of being implemented and in the next few months all large organisations using computers to store personal information about individuals will be required to register with the Data Protection Registrar... Right?

Wrong! Under the strict terms of the act, anyone holding such information should register, and anyone contravening the act may find themselves facing a fine of up to £2000, or in some cases an unlimited fine! There are very few exemptions in the act and even a simple mailing list or membership list will not

```

30 REM Title & Initials
40
50 REM DISCOUNTPRINTPRINTPRINTPRINT: STRING$,"*****PLEASE*****
60 REM *****: PRINT "Data Scrambler *****: PRINT "*****
70 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
80 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
90 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
10 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
110 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
120 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
130 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
140 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
150 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
160 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
170 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
180 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
190 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
200 REM *****: PRINT "*****: PRINT "*****: PRINT "*****
210
220 REM enter codeword, check for validity & read into array 'index'
230
240 CLASSPRINT:PRINT CODWORD:PRINT LEN(CODWORD)
250 IF LEN(CODWORD) < 3 THEN
260 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
270 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
280 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
290 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
300 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
310 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
320 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
330 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
340 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
350 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
360 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
370 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
380 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
390 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
400 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
410 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
420 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
430 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
440 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
450 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
460 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
470 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
480 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
490 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
500 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
510 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
520 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
530 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
540 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
550 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
560 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
570 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
580 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
590 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
600 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
610 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
620 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
630 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
640 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
650 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
660 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
670 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
680 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
690 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
700 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
710 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
720 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
730 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
740 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****
750 PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****: PRINT "*****

```

PRINTER OFFERS

Music Maker.
ONLY £189.95
w/ disc free of
ONLY £279.95
ONLY £199.95
ONLY £149.95
ONLY £119.95
ONLY £250.00
ONLY £189.95
ONLY £20.95

ONLY £249.00

ONLY £289.00
ONLY £309.00
ONLY £47.95
ONLY £4.25 each
ONLY £40.00
£159.00

ONLY £99.95
ONLY £114.95
ONLY £709.95

QUICKSHOT II JOYSTICK

PS 00 .. E21.00 including Case



Call toll-free 1-800-451-0000

At prices including P&P and VAT. Send cheque, Postal Order or Credit Card to: **Cherry Tree orders** accepted by phone. Orders welcomed. Many items of interest. Please telephone worldwide. European orders sent plus air insurance. Outside Europe £2.00 for airmail. Mail order to Everhart Shop please.

Bulk purchase allows us to offer this high quality, 80 column dot matrix printer for an unheard of price. Buy a proper printer for the price of a thermal. Friction feed is standard and an optional tractor unit is available.

Price includes lead in suit your micro.

Or to suit Spectrum with Kempston centronics "E" interface
£149.95

[illegible]

We are convinced that this printer offers the best performance and value in its class and at our unheard price in a BARGAIN.

Price includes Centronics lead to suit your micro.
Or to suit Spectrum with Kempston "E" Interface C209.95

This printer is a very high specification at an unbelievable price! It boasts 165 cps in draft mode and 70 cps in near letter quality mode. It boasts switch or software selectable 11 pin or 9 pin dot matrix printing. It has a 2K buffer and is EPSON compatible (it even uses Epson's standard as its standard PICA 80 column mode or a variety of others). It offers 40 columns condensed, 132 columns italics are available in all modes. Normal 132 columns would be expected to sell at \$300 plus we are offering it at our ultra keen price. Increase your printer lead to suit BBC, Amstrad, GEM 64, Oric, Dragon, Einstein or Mercury.

Price includes Centronics lead to suit your micro.
Or to suit Spectrum with Kempston "E" interface £299.00

Tel: 021-458 4564

The Graphic Adventure Creator
for the CPC range of Amstrad
Personal Computers. Cassette
£22.95. Disc **£24.95.**
from leading multiple
and independent
retailers. Also from our fast mail
order service post free.
Telephone: (0734) 591678.

Incentive Software Ltd,
54 London Street, Reading RG1 4SQ.

Probably
^
FLEX

**THE MOST SOPHISTICATED AND
FLEXIBLE ADVENTURE CREATING SYSTEM
IN THE WORLD.**



WILBUR

by T A Bartley

Part Two of the adventures of Wilbur, our 100% machine code, multi screen arcade game. This week, use the new loader program to

enter the data into memory and save with Save ""Code 41886, 2892. More to look forward to next week.

In the meantime, if all that typing is

getting to you, write to T A Bartley enclosing £2.00 for a copy of the game on tape: 81 Beverley Cres, Grimsby, South Humberside DN32 9TJ.

```
1000 REM      DECIMAL LOADER
1010 POKE 23609,50
1015 PRINT "START TYPING IN DUMP ONE NUMBER AT A
TIME, EACH NUMBER FOLLOWED BY RETURN"
1020 LET T=0: FOR N=41886 TO 44777
1030 INPUT J: PRINT N,J: POKE N,J: LET T=T+J: NEXT N
1040 IF T<>321152 THEN PRINT "DATA ERROR: CHECK
LISTING"
1050 IF T=321152 THEN PRINT "DATA OK"
```

```
41886 0 0 0 0 0 3 0
41892 0 0 0 0 0 0 0
41898 0 0 0 0 0 0 0
41904 0 0 0 0 6 16 221
41910 14 221 102 124
41916 198 32 95 87 26 182
41922 35 19 26 182 119
41928 43 205 207 163 16 237
41934 201 37 124 230 7 254
41940 7 192 125 214 111
41946 230 224 254 224 200
41952 198 8 103 201 221 110
41958 0 221 102 8 205 33
41964 164 221 187 14 221 116
41970 201 17 144 226 229
41976 111 38 0 41 41 41
41982 25 235 225 201 229 197
41988 213 245 6 8 119
41994 37 19 16 250 241 209
42000 193 225 201 33 0 64
42006 17 1 1 253 23
42012 175 119 237 176 201 125
42018 15 15 15 239 31 111
42024 124 7 7 230 224 181
42030 111 124 230 7 8 124
42036 15 15 15 230 24 246
42042 64 103 8 180 103 201
42048 124 230 24 203 47 203
42054 203 47 198 68 103
42060 201 6 16 221 94 19
42066 221 86 221 110 14
42072 221 102 15 58 170 163
42078 167 32 14 26 203 85
42084 40 10 166 40 6 62
42090 1 50 166 163 201 26
42096 182 119 35 19 170
42102 163 167 14 26 203
42108 65 10 166 40 6
42114 62 1 50 166 163 201
42120 26 182 119 43 205 207
42126 163 19 16 201 201 205
42132 228 163 6 221 110
42138 14 221 102 65 221 94
42144 19 221 86 47
42150 166 119 19 35 47
42156 166 119 19 43 205 207
```

```
42162 163 16 239 201 17 0
42168 96 0 64 1 0
42174 24 237 176 201 58 128
42180 162 167 200 71 221 33
42186 129 167 197 221 203 7
42192 25 221 110 0
42198 221 102 1 221 94 3
42204 721 86 4 205 2 164
42210 221 110 5 221 102 6
42216 221 126 7 189 1 8
42222 0 221 9 193 18 216
42228 201 58 128 162 167 200
42234 71 221 33 129 162 197
42240 221 126 3 205 244 163
42246 221 115 3 221 114 4
42252 221 110 0 221 102 1
42258 205 64 164 221 117 5
42264 221 116 6 1 8 0
42270 221 9 193 18 216
42276 58 162 167 200 33
42282 159 163 58 120 190
42288 200 33 158 163 126 167
42294 40 2 201 54 3
42300 178 162 71 221 85
42306 129 162 197 221 203 7
42312 70 10 13 221 110 5
42318 221 102 6 126 238 64
42324 119 205 97 165 1 8
42330 0 221 9 193 16 228
42336 201 221 110 0 162
42342 1 221 94 3 221 86
42348 4 6 26 47 166
42354 40 20 217 205 85 171
42360 217 205 141 165 205
42366 171 33 169 163 53 221
42372 54 7 0 201 37 19
42378 227 201 221 110 5
42384 221 102 6 62 7 119
42390 221 110 0 221 102 1
42396 221 94 3 221 86 4
42402 6 8 26 47 166 119
42408 37 16 248 201
42414 122 163 167 200 71 221
42420 124 163 221 126 0
42426 205 244 163 221 115 0
42432 221 114 1 221 35 221
```

```
42438 221 110 0 221 102
42444 1 205 2 164 205 64
42450 164 58 123 163 119 16
42456 234 201 58 122 163 167
42462 200 71 221 33 124 163
42468 221 94 0 221 86 1
42474 197 213 221 221 35
42480 221 110 0 102 1
42486 205 234 165 209 193 16
42492 237 201 6 8 47
42498 166 40 6 62 1
42504 166 163 201 19 16
42510 241 201 62 61 205 244
42516 163 58 157 163 167 200
42522 71 33 128 87 205 2
42528 164 35 250 201 6
42534 6 17 52 166 33 126
42540 90 26 119 35 19 16
42546 250 201 65 10
42552 68 58 201 162 167
42558 200 71 221 33 202 162
42564 197 33 96 204 221 126
42570 2 167 40 7 71 17
42576 32 0 25 16 253 221
42582 117 11 221 116 12 221
42588 70 8 25 16 253 221
42594 117 16 221 116 17 1
42600 22 0 221 9 193 6
42606 213 201 58 201 162 167
42612 200 33 164 163 58 120
42618 92 190 200 119 221 33
42624 201 162 221 70 0 221
42630 35 197 205 241 168 221
42636 203 7 70 40 6 205
42642 147 164 205 161 164 167
42648 1 22 0 221 9
42654 16 231 201 205 6 169
42660 205 32 169 221 203 7
42666 78 32 18 221 203 7
42672 86 32 12 221 203 7
42678 94 32 11 221 203 7
42684 102 32 5 205 204 166
42690 24 3 205 10 167 221
42696 203 7 134 201 221 126
42702 1 221 203 7 78 40
42708 15 221 190 4 23
```

```
42714 221 203 7 214 221 203
42720 7 142 24 13 221 190
42726 5 58 0 221 203 7
42732 206 221 203 7 150 221
42738 203 7 78 221 70 3
42744 40 8 221 53 1
42750 251 195 102 167 221 52
42756 1 16 251 195 102 167
42762 221 126 0 221 203 7
42768 94 40 27 221 190 4
42774 32 221 176 187 167
42780 32 221 203 7 230
42786 221 203 7 158 205 6
42792 169 205 169 24 56
42798 221 190 5 32 29 221
42804 126 13 221 190 8
42810 32 221 203 7 222
42816 221 203 7 166 221 54
42822 13 0 205 6 169 205
42828 45 169 24 221 126
42834 13 167 32 8
42840 221 203 7 40 2
42846 237 58 221 134 9 221
42852 119 0 265 228 163 14
42858 1 205 77 164 205 114
42864 167 201 221 110 14 221
42870 102 15 124 230 7 254
42876 7 82 2 49 1 60
42882 9 205 164 229 17
42888 0 0 221 203 7 94
42894 40 14 221 126 5 214
42900 8 221 190 0 56
42906 35 35 24 17 221 203
42912 7 102 40 37 221 126
42918 4 198 7 221 190 0
42924 48 8 43 7 119
42930 167 237 82 119 126
42936 6 225 119 35 17
42942 0 119 167 237 82 8
42948 61 200 8 24 241 221
42954 203 7 78 40 13 221
42960 126 5 214 8 221 190
42966 1 56 221 25 24 18
42972 221 126 4 198 8 221
42978 190 1 48 208 8 71
42984 8 167 237 16 251
```

42990	62	7	119	35	119	24	43440	176	221	110	4	221	102	43890	254	7	32	2	54	0	44334	0	75	13	213	229	209
42996	193	221	119	161	221		43446	5	126	50	128	162	167	43896	35	124	254	91	32	243	44340	0	213	43	237	184	18
43002	70	0	221	35	197	221	43452	40	18	35	117	129		43902	201	42	28	172	70	119	44346	225	17	32	0	167	237
43008	126	4	205	244	163	221	43458	162	197	1	4	0	237	43908	62	63	164	103	34	28	44352	209	193	16	231	201	
43014	110	0	221	102	1	229	43464	176	19	19	19	19	193	43914	172	120	201	230	7	135	44358	62	8	1	0	17	
43020	293	39	168	225	205	28	43470	16	243	221	110	6	221	43920	95	110	0	33	30	172	44364	32	24	33	223	87	245
43026	168	1	6	0	221	9	43476	102	7	126	50	201	162	43926	25	94	35	86	235	253	44370	213	17	32	0	4	25
43032	193	16	227	201	205	64	43482	167	40	23	35	71	17	43932	6	24	197	205	150	173	44376	16	253	65	4	35	16
43038	164	221	126	3	8	221	43488	202	162	197	1	11	0	43938	205	70	119	193	16	246	44382	253	209	66	5	197	6
43044	70	2	221	126	5	229	43494	237	176	229	213	225	17	43944	201	6	24	197	205	125	44388	0	75	213	229	17	119
43050	119	35	16	252	225	17	43500	11	0	25	235	225	193	43950	173	205	9	173	205	150	44394	0	209	229	237	176	119
43056	32	0	167	237	82	8	43506	16	238	221	110	8	221	43956	173	205	119	173	193	119	44400	225	209	193	120	16	236
43062	61	200	24	232	221	70	43512	102	9	126	50	122	163	43962	240	201	6	32	197	205	44406	241	67	119	35	119	252
43068	3	197	229	221	70	2	43518	167	40	8	17	122	163	43968	125	173	205	9	173	193	44412	201	6	192	17	255	87
43074	205	2	164	35	16	250	43524	1	12	0	237	176	221	43974	119	246	201	6	24	197	44418	213	225	43	197	1	31
43080	225	125	254	32	40	5	43530	126	119	50	162	163	201	43980	205	125	173	205	9	173	44424	0	26	237	184	35	34
43086	1	32	7	24	3	1	43536	33	33	161	58	213	161	43986	205	46	172	205	203	172	44430	0	43	83	27	193	16
43092	32	0	167	237	66	193	43542	167	40	7	71	17	9	43992	193	16	240	201	6	24	44436	240	201	17	0	64	6
43098	16	225	201	33	102	169	43548	0	25	16	253	235	201	43998	197	205	43	172	205	203	44442	23	197	213	6	0	197
43104	17	134	163	1	22	0	43554	33	128	162	6	9	197	44004	172	193	16	246	201	6	44448	213	98	125	254	224	32
43110	237	176	201	58	110	162	43560	1	8	0	9	26	119	44010	24	197	205	128	172	205	44454	9	46	0	122	198	8
43116	167	206	33	165	163	58	43566	19	193	16	245	201	33	44016	151	172	205	46	172	205	44460	103	24	3	198	32	111
43122	120	92	190	200	119	33	43572	128	162	6	9	197	1	44022	203	172	193	16	240	201	44466	1	32	0	237	176	209
43128	127	162	126	167	119	2	43578	8	0	9	126	18	19	44028	6	32	197	205	126	172	44472	193	16	227	209	123	119
43134	53	201	54	3	33	113	43584	193	16	245	201	33	33	44034	205	151	172	193	16	246	44478	198	32	119	167	32	4
43140	162	58	126	162	134	205	43590	161	17	34	161	1	179	44040	201	6	24	197	205	126	44484	122	198	6	119	13	16
43146	244	163	221	33	114	162	43596	0	62	1	119	237	176	44046	172	205	151	172	205	150	44490	208	33	224	87	205	106
43152	58	110	162	71	197	221	43602	201	0	0	0	0	0	44052	173	205	70	173	193	16	44496	172	201	33	231	90	119
43158	110	0	221	102	1	221	43608	0	0	0	0	0	0	44058	240	201	0	0	156	171	44502	171	163	167	200	71	119
43164	70	2	205	2	164	35	43614	0	0	0	0	0	83	44064	169	171	188	171	201	171	44508	2	197	6	5	119	35
43170	16	250	221	35	221	35	43620	67	79	82	69	72	73	44070	224	171	233	171	252	171	44514	16	252	60	193	16	245
43176	221	35	193	16	251	119	43626	83	67	79	82	69	80	44076	9	172	17	224	87	6	44520	58	171	163	71	33	231
43182	126	162	58	111	162	167	43632	79	84	73	79	78	33	44082	23	197	213	6	8	197	44526	87	197	229	6	5	62
43188	119	119	126	254	3	119	43638	135	87	34	83	170	6	44088	213	98	123	167	32	8	44532	205	244	163	225	205	119
43194	3	54	0	201	52	201	43644	5	33	99	170	205	150	44094	46	224	122	214	8	103	44538	2	161	35	16	250	193
43200	126	167	40	2	53	201	43650	170	33	147	87	34	83	44100	24	3	214	32	111	1	44544	16	237	201	58	171	163
43206	54	3	201	58	110	162	43656	170	6	7	119	104	170	44106	32	0	237	176	209	21	44550	167	200	58	170	163	167
43212	167	200	71	221	33	114	43662	205	190	170	33	224	87	44112	193	119	228	209	119	214	44556	37	70	62	253	219	254
43218	162	197	221	119	0	221	43668	34	83	170	6	6	33	44118	32	119	254	224	32	4	44562	230	31	87	62	191	219
43224	102	1	205	64	164	58	43674	111	170	205	190	170	201	44124	122	214	8	87	193	16	44568	254	162	254	31	200	62
43230	112	162	221	70	2	119	43680	33	141	87	34	83	170	44130	208	33	0	71	205	196	44574	1	50	170	163	33	172
43236	119	16	252	721	35	221	43686	6	5	33	85	170	205	44136	172	201	6	8	197	229	44580	163	58	120	92	190	200
43242	35	221	35	193	16	227	43692	190	170	201	33	153	67	44142	229	209	19	175	119	1	44586	119	33	173	163	126	167
43248	201	221	126	21	221	190	43698	34	83	170	6	5	33	44148	31	0	237	176	225	37	44592	40	2	119	201	54	5
43254	10	40	4	221	52	119	43704	90	170	265	190	170	201	44154	193	16	239	201	6	192	44598	42	175	163	229	6	8
43260	201	221	119	21	0	221	43710	197	229	126	205	244	163	44160	17	0	64	215	225	35	44604	226	203	39	119	37	16
43266	203	7	198	201	221	203	43716	119	170	265	2	164		44166	197	1	31	0	26	237	44610	152	167	225	192	45	34
43272	7	126	40	6	221	203	43722	33	85	170	52	225	35	44172	176	43	54	0	119	35	44616	175	163	58	174	163	61
43278	7	94	32	7	221	110	43728	193	16	235	201	17	85	44178	19	193	16	240	201	62	44622	40	4	174	163	201	119
43284	11	221	102	12	201	221	43734	170	42	95	170	24	6	44184	8	1	0	17	17	32	44628	62	5	174	163	58	119
43290	110	119	221	102	17	201	43740	17	90	170	42	97	170	44190	24	33	223	87	245	213	44634	171	163	61	50	171	163
43296	221	126	9	221	190	18	43746	1	240	216	205	10	171	44196	17	32	0	4	25	16	44640	33	230	87	79	135	135
43302	40	5	221	52	16	24	43752	18	19	1	119	252	205	44202	253	65	4	119	16	253	44646	129	133	111	34	175	163
43308	7	221	52	13	221	54	43758	10	171	18	19	1	156	44208	209	66	241	197	6	119	44652	175	50	170	163	201	144
43314	18	0	221	126	8	167	43764	255	205	16	171	18	19	44214	75	13	213	229	209	0	44658	175	16	176	247	175	77
43320	40	37	221	190	13	32	43770	1	245	253	205	10	171	4422													



Random words

by Richard Hoptroff

This week, the remainder of the listing for the Random Words program, plus the program notes.

Program Notes

In Line 260, the name of the main character is defined. Then, in the Data statements at the end, the computer is taught all the other words it knows. If a printer is to be used, the word Remark should be removed from Line 280.

Your own personal words can be added to the Data file, but the variables in Lines 10 and 40 should be altered to total thus:

NCj - Number of conjunctives (and, but, ...), minus one. These must appear at the beginning of the Data block, at Line 2000.

NSj - Number of subjective nouns (I, he, she, ...), minus one. The Data for these starts at Line

3000.
NPj - Number of personal pronouns (my, his, her, ...), minus one. This Data starts at Line 4000.

NNb - Number of "numbers" (the, a), minus one. This Data is on Line 4990.

NNa - Number of nouns (brussel sprout, size nine chucker boot, kitchen sink, ...), minus one. This Data starts at Line 5000.

NVb - Number of past tense verbs (attacked, nibbled, ...), minus one. This Data starts at Line 6000.

NAj - Number of adjectives (homicidal, half eaten, ...), minus one. This Data starts at Line 7000.

NCm - Number of comments (then, meanwhile, ...), minus one. This Data starts at Line 8000.

NAv - Number of adverbs (frantically, suddenly, ...), minus one. This

Data starts at Line 9000.

Not - Number of quotes ("Go jump in a lake", "You smell like a..."), minus one. This Data starts at Line 10000.

NPh - Number of verbs of phrases of the form noun, verb, adjective, (wasn't tried hard to be...), minus one. This Data starts at Line 11000.

NWy - Number of reasons why (for tax reasons, for the money, ...), minus one. This Data comes last at Line 12000.

Ltn - Number of verbs that require a noun after them, minus one. These verbs must be at the beginning of the Verb Data.

San - Number of quotes needing nouns to finish them, minus one. These quotes must be at the beginning of the quote Data.

```
1210 fmgf:
1220 END Define
1240 Define PROCEDURE Caps(n%):
1250 LOCAL fred%:led
1260 IF Cpi=0:ans$=hik%:RETURN
1300 led = CODE(hik%||Cpi-0):IF led%$fied=led-32
1310 IF LEN(hik%):trans=Caps(fied):RETURN
1320 fred=Caps(fied)+hik%2 TO:
1340 ans$=fred
1360 END Define
1400 Define PROCEDURE Ansh%:
1410 IF an%<0:Caps(hik%):PRINT 'ans$':RETURN
1420 an%<0:IF hik%|| INSTR 'aeiouAEIOU':Caps('a')>0:PRINT 'ans$':
1430 hik%:RETURN
1430 Caps('a')>0:PRINT 'ans$':hik%:
1440 END Define
1500 Define PROCEDURE Num:
1510 Caps(IN%):Cpi(hik%):IF ans$<'a':ans$=1:RETURN
1511 IN ans$<'a':ans$=1:Cpi=1:RETURN
1520 PRINT 'ans$'
1530 END Define
2000 DATA 'before', 'when', 'and then', 'but', 'but', 'after', 'and', 'a
nd', 'because
3000 DATA 'I', 'I', 'Neil Kinnock', 'Mrs Thatcher', 'he', 'she', 'it',
'they'
4000 DATA 'his', 'her', 'ey', 'the', 'm', 'the', 'its', 'their', 'its
4990 DATA 'the', 'the', 'a'
5000 DATA 'coca', 'chain saw', 'kitchen sink', 'parrot', 'Sledge Ra
nger', 'sperm whale', 'slice of leach', 'wheelbarrow', 'bryl', 'evang
elist
5001 DATA 'prawn cocktail', 'iceberg', 'oyster', 'eucalyptus tree', 'c
amel', 'Chesterfield sofa', 'puff of smoke', 'spring onion', 'kitten',
'pebble'
5002 DATA 'gnome', 'dingo', 'size nine chucker boot', 'duckbilled pi
ctopus', 'unknown globule', 'eq', 'hot tea', 'cloud', 'coffee percol
ator', 'pot of karma', 'penguin'
5003 DATA 'lump', 'four letter word', 'vodka martini', 'teddy bear',
'philosopher', 'poet', 'bolt of lightning', 'brnardsword', 'black hol
e', 'glass of water'
5004 DATA 'glob of eucus', 'brussel sprout', 'bottom', 'elephant', 'p
int of Guinness', 'wooden leg', 'aspidistra', 'noren', 'shady characte
```

```
r', 'paul
5005 DATA 'termites', 'sewage works', 'lizard'
6000 DATA 'ate', 'made love m', 'changed into', 'fell into', 'superg
lued it to', 'nibbled', 'perplexed', 'created', 'gubed up', 'crucitie
c
6001 DATA 'displead', 'exorcised', 'resurrected', 'desolated', 'stol
e', 'crashed into', 'escaped from', 'shot', 'looked like', 'sailed'
6002 DATA 'felt like', 'burned into', 'found', 'searched in vain for
', 'force fed m with', 'got carried to', 'graffitied all over', 'ser
enaded', 'hit it with', 'groped'
6003 DATA 'stole', 'gave his', 'aggravated', 'pretended to be', 'gave
birth to
6004 DATA 'scurled', 'started a revolution', 'disappeared', 'tespon
sibly died', 'went on holiday', 'went to jail', 'tried to, but couldn
t', 'refused', 'appeared'
7000 DATA 'green spotted', 'blubbery', 'furry', 'deranged', 'Yiddish',
'alcoholic', 'enormous', 'docile', 'three-legged', 'angry'
7001 DATA 'horrendous', 'mutant', 'perilous', 'haggy', 'ubiquitous',
'dead', 'red striped', 'lumpy', 'infamous', 'stupid'
7002 DATA 'blind drunk', 'existential', 'prismal', 'lal', 'ravenous',
'intelligent', 'rather large', 'bouncy', 'retarded', 'extremely tall
7003 DATA 'temperamental', 'sleazy', 'carnivorous', 'unshaven', 'hairy',
'musically depressed', 'little', 'motionless', 'grotesque', 'brousa
d'
7004 DATA 'electronic', 'stylish', 'homocidal', 'nauseous', 'passive',
'greasy', 'dirty'
8000 DATA 'then', 'next', 'soon', 'meanwhile', 'still', 'however'
9000 DATA 'visciously', 'quickly', 'slowly', 'accidentally', 'publicly',
'suddenly', 'frantically', 'temporarily', 'half-heartedly'
10000 DATA 'Go and see the', 'Go and mutate into a', 'Go and find
everything but the', 'I've got a', 'I wish I was a', 'You must stay
a', 'You look like a', 'Go stick your head in a', 'I've just seen th
e', 'Doh, I could really handle a'
10001 DATA 'You smell like a'
10500 DATA 'Go jump in a lake', 'Go forth and multiply', 'Miss's
bigger than yours', 'Pog off', 'Tuo te tuo te tuo'
11000 DATA 'was', 'tried hard to be', 'wasn't', 'looked', 'felt', 'did
n't like being', 'pretended to be', 'knew what it was like to be'
12000 DATA 'for tax reasons', 'being an one of those goods',
'- but then, why not?', 'for the money', 'a - who wouldn't'
```

CHRISTMAS MICROFAIR



Looking forward to a high-tech Christmas?
Then come along to the CHRISTMAS MICROFAIR at the Horticultural Hall, London SW1 on the 14th December. It's enough to make even Santa Claus's eyes light up.
Everything you ever wanted for the ZX Spectrum, Spectrum + and the QL under one roof, in one day of non-stop computer entertainment.

Software, hardware, books, add-ons, printers, monitors, user clubs, magazines, computers, and a fantastic range of gizmos that are not generally available in the shops.

There's all those 'just released' programs for the Spectrum and QL, and more than one opportunity of getting something at special 'show' prices.

Send for reduced-price advance tickets now.

CHRISTMAS MICROFAIR
DECEMBER 14TH 1985, HORTICULTURAL HALL
GREYCOAT STREET/ELVERTON STREET LONDON SW1
10am - 6pm
ADMISSION: £1.75 (ADULTS): £1.25 (KIDS UNDER 14yrs)

SEND FOR REDUCED PRICE ADVANCE TICKETS TODAY

Send to Mike Johnston (Organiser), Dept PCW ZX MICROFAIRS
71 Park Lane, London N17 0HG.

Please send me _____ advance tickets
(Adult @ £1.25)

Please send me _____ advance tickets
(Child under 14 @ £1.00)

Name _____

Address _____

17th
ZX MICROFAIR

Please include a stamped, self-addressed envelope and make cheques/POs payable to ZX Microfair

EXHIBITORS. CALL MIKE JOHNSTON ON 01-801 9172 FOR DETAILS OF STAND AVAILABILITY.

COMPUTER POST

"Your wish is our Commodore/Spectrum/Amstrad etc"
2mas Special - Free blank tape with every £10 spent

	OUR RRP PRICE	OUR RRP PRICE	OUR RRP PRICE		
Terminator	£ 6. 7.25	1 The Computer	£ 4. 11.25	They Got A Million	£ 9. 7.50
Calculator	£ 5. 1.25	People Talk!	£ 4. 11.25	Main Office	£ 5. 1.25
G.G. Superblast	£ 5. 4.25	Search	£ 4. 7.50	Master File	£ 24.95 11.95
Mr Waste	£ 5. 5.50	Spooky Island	£ 4. 11.25	Masterfile Disk	£ 29.95 23.95
Snake	£ 4. 11.25	High 7 Games	£ 4. 11.25	Master Calc Disk	£ 29.95 23.95
Lord of the Rings	£ 5. 12.50	Victor Comp. People	£ 9. 9. 7.50		
Swamp	£ 5. 6.25	Revs	£ 4. 11.25		
Armed Forces	£ 5. 7.50	New Games II	£ 5. 7.50		
Mr. 10 on the Run	£ 5. 8.50	2000	£ 9. 7.50		
Yakking Po	£ 5. 6.95	Young Ones	£ 7. 5.75		
New Games II	£ 5. 7.25	Amstrad	£ 4. 9. 4.75		
Mr. 10	£ 7. 5.75	37 Blank Discs	£ 4. 9. 4.75		
Commodore		37 Blank Disks	£ 4. 9. 4.75		
Amstrad	£ 4. 9. 4.75	37 Blank Disks	£ 4. 9. 4.75		
Quikman	£ 4. 9. 4.75	37 Blank Disks	£ 4. 9. 4.75		
Scavenger	£ 2. 9. 10.75	37 Blank Disks	£ 4. 9. 4.75		
Commodore	£ 4. 9. 4.75	37 Blank Disks	£ 4. 9. 4.75		
Full Charge	£ 4. 9. 4.75	37 Blank Disks	£ 4. 9. 4.75		
Winter Games	£ 4. 9. 4.75	37 Blank Disks	£ 4. 9. 4.75		
More on the Run	£ 4. 9. 4.75	37 Blank Disks	£ 4. 9. 4.75		
Date	£ 4. 9. 4.75	37 Blank Disks	£ 4. 9. 4.75		

Tapes not listed - no problem - just send us the details and a cheque for RRP less £1 and we'll do the rest.

All prices include a p & p

Cheques/POs for Computer Post, 48 South Park, Upper Edmonton, London N18 1TF
01-803 7986 (ansaphone, enquire welcome)

PCW

LONDON ADVENTURE



Tour
London
from your
Armchair

Adrian & David together

I recommend this valuable wandol

through London" Tony Briggs, PCW 21/11/85

"original and inspiring - very enjoyable

and challenging" exchange from the usual

"fantasy settings" J.A. Compiling, Dec 85

"...a 24 Cent Buy At

Single User, Dec 85

"I would keep any adventure with

attribution" Crash, Oct 85

Available by mail order only

Cassette £1.95 Microdrive £1.95 (incl. p&p)

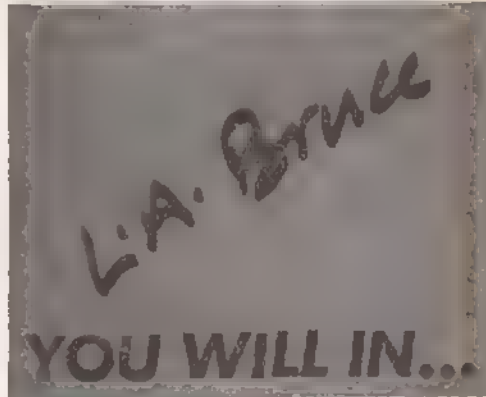
Fridaysoft

Unit F, The Maltings, Station Road

Sawbrey, York, YO1 1JX

SPECTRUM 48K

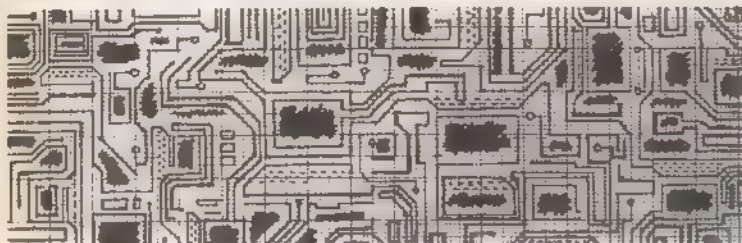
HAVE YOU MET...



YOU WILL IN...

**ROCK'N
WRESTLE**





BANK STATEMENT

by John Clarke

This is a program for the BBC B to provide a quick and easy Bank Statement. To run it, you'll need a disc drive (although it can be adapted for tape) and possession of an Epson (or Epson compatible) printer would be useful.

To start the program up from scratch, load and run it, type 'W' (for Write), press 'I' and enter the details as requested - don't forget to Save all the entries when you have finished. Typing 'P' (for Print) will give you a copy print-out from any part of the statement.

You are limited to 99 entries, which should last most people for a year more or less. But by altering the two lines 630 and 760 to 'BANK2' instead of 'BANK1' then a continuation statement is available, and continues over as many discs as required.

```

10 REM BANK STATEMENT
20 REM by John Clarke
30 REM Emax3: Dmax8: Mmax10: Dmax8: Cmax8:
   Bmax8
40 EX=10002020E
50 *TV255,0
60 MODE7:VDU15
70 PRINT "WHITE letters on BLUE....A"
  "BLACK letters on YELLOW....B" "CHO
USE by PRESSING the letter required":AS=GET
  $IF AS<>"A" AND AS<>"B" THEN 60
80 IF AS="A" THEN MODE3:VDU19,0,4,0,0,0
90 IF AS="B" THEN MODE3:VDU19,1,0,0,0,0,
  17,0,3,0,0,0
100 DINT$(99),M$(99),D(99),C(99),B(99),P$(
  10)
110 IX=99
120 PROCload
130 ON ERROR GOTO 140
140 IF ERR=17 THEN 170
150 IF ERR=222 THEN CLOSEC0:GOTO 170
160 ON ERROR REPORT:PRINT "error line
  "ERL:GOTO170
170 PROCheading
180 REPEAT
190 PROCinfo
200 UNTIL FALSE
210 END
220 DEFPROCheading:VDU20,0,1,79,0
230 PRINT"Mo";TAB(6)"DATE":TAB(17)
  "METHOD":TAB(37)"DEBIT":TAB(50)"CREDIT
  "TAB(63)"BALANCE"
240 ENDPROC
250 DEFPROCinfo
260 PROCbase_window
270 PRINT" L-LOAD S-SAVE P-PRINT
  R-READ W-WRITE E-END A-ALTER an
  entry"
280 AS=GET$:IF AS="R"PROCread
290 IF AS="W"PROCwrite
300 IF AS="S"PROCsave
310 IF AS="P"PROCprint
320 IF AS="L"PROCload
330 IF AS="A"PROCalter
340 IF AS="E" CLEAR:MODE7:PRINTTAB(14,0)
  "STOPPED":FOR L=11 TO 12:PRINTTAB(0,
  L);CHR$141;CHR$134;"HAVE YOU SWAPPED":NEXT:
  FOR L=15 TO 16:PRINTTAB(9,L);CHR$141
  ;CHR$131;"HAVE YOU SAVED":NEXT:END
350 ENDPROC
360 DEFPROCTop_window
370 VDU20,0,21,79,2:CLS
380 ENDPROC
390 DEFPROCbase_window
400 VDU20,0,24,79,22:CLS
410 ENDPROC
420 DEFPROCread
430 PROCheading
440 PROCTop_window
450 FOR NX=1 TO IX
460 NS=STR$(NX)
470 PRINTTAB(0);NSTAB(6);TS(NX);TAB(10);M$(
  NX);D(NX);C(NX);B(NX)
480 NEXT NX
490 ENDPROC
500 DEFPROCwrite
510 PROCheading
520 PROCbase_window
530 CLS:INPUT "Item no:"IX:CLS
540 PROCentry_date:CLS
550 PROCentry_method:CLS
560 PROCentry_debit:CLS
570 PROCentry_credit:CLS
580 IF IX=1 B(1)=C(1)
590 IF IX>1 B=B(IX-1);B(IX)=B-D(IX)+C(IX)
600 PROCread
610 ENDPROC
620 DEFPROCsave
630 X=OPENOUT"BANK1"
640 *FX200,1
650 FORNX=1 TO IX
660 PRINTX,TS(NX),M$(NX),D(NX),C(NX),B(NX)
670 NS=STR$(NX)
680 PRINTTAB(0);NSTAB(6);TS(NX);TAB(10);M$(
  NX);D(NX);C(NX);B(NX)
690 NEXT NX
700 CLOSEX
710 *FX200,0
720 ENDPROC
730 DEFPROCload
740 *FX200,1
750 PROCTop_window
760 Y=OPENIN"BANK1"
770 NX=1
780 REPEAT
790 INPUTEY,TS(NX),M$(NX),D(NX),C(NX),B(NX)
800 NS=STR$(NX)
810 PRINTTAB(0);NSTAB(6);TS(NX);TAB(17);
  M$(NX);D(NX);C(NX);B(NX)
820 NX=NX+1
830 UNTIL EOFY:IX=NX-1
840 CLOSEY
850 *FX200,0
860 ENDPROC
870 DEF PROCentry_date
880 LOCAL AS,B$
890 PRINT"DATE:";
900 AS=""
910 BS=GET$
920 IF BS=CHR$13 THEN TS(IX)=AS:PRINT:
  ENDPROC

```

```

930 IF B$=CHR$13 AND A$<>"" THEN =A$
940 IF B$=CHR$127 AND A$<>"" THEN VDU127:
A$=LEFT$(A$,LEN(A$)-1):BOTO1010
950 IF LEN(A$)=6 THEN VDU7:BOTO910
960 A$=A$+B$:PRINT B$;BOTO 910
970 DEF PROCentry_method
980 LOCAL A$,B$,C$
990 PRINT"METHOD";
1000 A$="":C$=""
1010 B$=GET$
1020 IF LEN(A$)<5 AND B$=CHR$13 THEN
A$=A$+C$:M$(IX)=A$:ENDPROC
1030 IF B$=CHR$13 THEN M$(IX)=A$:ENDPROC
1040 IF B$=CHR$13 AND A$<>"" THEN =A$
1050 IF B$=CHR$127 AND A$<>"" THEN VDU127:A$=
LEFT$(A$,LEN(A$)-1):BOTO1010
1060 IF LEN(A$)=10 THEN VDU7:BOTO1010
1070 A$=A$+B$:PRINT B$;BOTO 1010
1080 DEF PROCentry_debit
1090 LOCAL A$,B$
1100 PRINT"DEBIT:";
1110 A$=""
1120 B$=GET$
1130 IF B$=CHR$13 THEN D$(IX)=VAL(A$):
PRINT:ENDPROC
1140 IF B$=CHR$13 AND A$<>"" THEN =A$
1150 IF B$=CHR$127 AND A$<>"" THEN VDU127:
A$=LEFT$(A$,LEN(A$)-1):BOTO1120
1160 IF LEN(A$)=7 THEN VDU7:BOTO1120
1170 A$=A$+B$:PRINT B$;BOTO 1120
1180 DEF PROCentry_credit
1190 LOCAL A$,B$
1200 PRINT"CREDIT:";
1210 A$=""
1220 B$=GET$
1230 IF B$=CHR$13 THEN C$(IX)=VAL(A$):
PRINT:ENDPROC
1240 IF B$=CHR$13 AND A$<>"" THEN =A$
1250 IF B$=CHR$127 AND A$<>"" THEN VDU127:
A$=LEFT$(A$,LEN(A$)-1):BOTO1220
1260 IF LEN(A$)=7 THEN VDU7:BOTO1220
1270 A$=A$+B$:PRINT B$;BOTO 1220
1280 DEFPROCprint
1290 LOCAL NX,PX
1300 PROCbase_window
1310 CLS:INPUT"Print from which no: ";PX
1320 VDU2:FX200,1
1330 PRINT"NO: TAB(0) "DATE"TAB(10) "METHOD"
TAB(37) "DEBIT"TAB(50) "CREDIT"TAB(63) "
BALANCE:"PRINT ""
1340 FOR NX=PX TO IX
1350 N$=STR$(NX)
1360 PRINTTAB(0);N$TAB(0);T$(NX)TAB(10);
M$(NX);D$(NX);C$(NX);S$(NX)
1370 NEXT NX
1380 VDU3:FX200,0:ENDPROC
1390 DEFPROCalter
1400 SX=IX
1410 PROCbase_window
1420 PRINT"Altering an item Y/N"
1430 A$=GET$:IF A$="N" THEN ENDPROC
1440 PROCwrite
1450 FOR N=IX TO SX-1
1460 IX=IX+1
1470 B$(IX)=B$(IX-1)+C$(IX)-D$(IX)
1480 NEXT
1490 PROCread
1500 ENDPROC

```

E/D/D MEGASAVE SOFTWARE

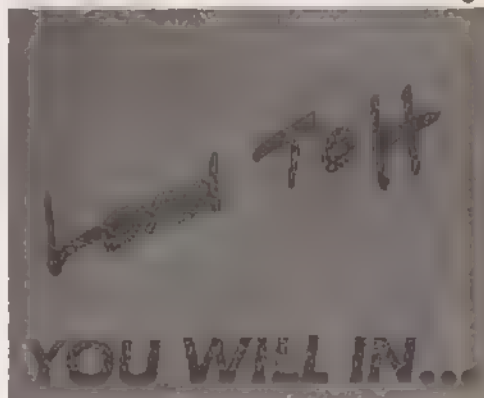
46 THE MALTINGS, STANDEED ABBOTS, WARE, HERTS

SPECTRUM A&E	REP PRICE	OUR PRICE	SPECTRUM A&E	REP PRICE	OUR PRICE	SPECTRUM A&E	REP PRICE	OUR PRICE
Madman Bumper	7.95	5.95	Worms in Paradise	8.95	7.95	Madman Bumper	7.95	5.95
Fighting Warrior	7.95	5.95	Worms in Paradise	8.95	7.95	Fighting Warrior	7.95	5.95
Four Games 1	6.95	5.95	Worms in Paradise	8.95	7.95	Four Games 1	6.95	5.95
Daley T. Superstar	6.95	5.95	Worms in Paradise	8.95	7.95	Daley T. Superstar	6.95	5.95
Control Maze	6.95	5.95	Worms in Paradise	8.95	7.95	Control Maze	6.95	5.95
Expanding Wall	6.95	5.95	Worms in Paradise	8.95	7.95	Expanding Wall	6.95	5.95
Computer James Card	7.95	5.95	Worms in Paradise	8.95	7.95	Computer James Card	7.95	5.95
Super Devil	7.95	5.95	Worms in Paradise	8.95	7.95	Super Devil	7.95	5.95
Bratstorm	1.95	1.95	Worms in Paradise	8.95	7.95	Bratstorm	1.95	1.95
Robot Mission	7.95	5.95	Worms in Paradise	8.95	7.95	Robot Mission	7.95	5.95
Pacodrome	7.95	5.95	Worms in Paradise	8.95	7.95	Pacodrome	7.95	5.95
Internal Flight	8.95	5.95	Worms in Paradise	8.95	7.95	Internal Flight	8.95	5.95
Robman's Flight Quiz	8.95	5.95	Worms in Paradise	8.95	7.95	Robman's Flight Quiz	8.95	5.95
Ohno's Users	8.95	5.95	Worms in Paradise	8.95	7.95	Ohno's Users	8.95	5.95
Melko	8.95	5.95	Worms in Paradise	8.95	7.95	Melko	8.95	5.95
Sir Fred	8.95	5.95	Worms in Paradise	8.95	7.95	Sir Fred	8.95	5.95
Three Wagon Parades	8.95	5.95	Worms in Paradise	8.95	7.95	Three Wagon Parades	8.95	5.95
New Games 11	6.95	5.95	Worms in Paradise	8.95	7.95	New Games 11	6.95	5.95
Transformation	7.95	5.95	Worms in Paradise	8.95	7.95	Transformation	7.95	5.95
Swampy's World	7.95	5.95	Worms in Paradise	8.95	7.95	Swampy's World	7.95	5.95
Deathstar	8.95	5.95	Worms in Paradise	8.95	7.95	Deathstar	8.95	5.95
Secrets & Secrets	8.95	5.95	Worms in Paradise	8.95	7.95	Secrets & Secrets	8.95	5.95
Frame of Hollywood	8.95	5.95	Worms in Paradise	8.95	7.95	Frame of Hollywood	8.95	5.95
William Wobblers	8.95	5.95	Worms in Paradise	8.95	7.95	William Wobblers	8.95	5.95
Robman's Flight	8.95	5.95	Worms in Paradise	8.95	7.95	Robman's Flight	8.95	5.95
Allypment	4.95	3.95	Worms in Paradise	8.95	7.95	Allypment	4.95	3.95
Rock on Shakedown	8.95	5.95	Worms in Paradise	8.95	7.95	Rock on Shakedown	8.95	5.95
Worm Cup	8.95	5.95	Worms in Paradise	8.95	7.95	Worm Cup	8.95	5.95
Audience	8.95	5.95	Worms in Paradise	8.95	7.95	Audience	8.95	5.95
Red Moon	8.95	5.95	Worms in Paradise	8.95	7.95	Red Moon	8.95	5.95
William Music Box	7.95	5.95	Worms in Paradise	8.95	7.95	William Music Box	7.95	5.95
Terraviva	7.95	5.95	Worms in Paradise	8.95	7.95	Terraviva	7.95	5.95
Impossible Mission	7.95	5.95	Worms in Paradise	8.95	7.95	Impossible Mission	7.95	5.95
Ten Computer Hits	9.95	7.95	Worms in Paradise	8.95	7.95	Ten Computer Hits	9.95	7.95
On Computer Hits	9.95	7.95	Worms in Paradise	8.95	7.95	On Computer Hits	9.95	7.95
Secret Diary of A. Mole	9.95	7.95	Worms in Paradise	8.95	7.95	Secret Diary of A. Mole	9.95	7.95
Shadow of the Unicorn	14.95	12.95	Worms in Paradise	8.95	7.95	Shadow of the Unicorn	14.95	12.95
Thunderbolt	8.95	7.95	Worms in Paradise	8.95	7.95	Thunderbolt	8.95	7.95
Impossible Mission	7.95	5.95	Worms in Paradise	8.95	7.95	Impossible Mission	7.95	5.95
Auto Game	7.95	5.95	Worms in Paradise	8.95	7.95	Auto Game	7.95	5.95
Yau Goh	7.95	5.95	Worms in Paradise	8.95	7.95	Yau Goh	7.95	5.95
Manport	7.95	5.95	Worms in Paradise	8.95	7.95	Manport	7.95	5.95
Dored of the Rings	6.95	5.95	Worms in Paradise	8.95	7.95	Dored of the Rings	6.95	5.95
Starquake	7.95	5.95	Worms in Paradise	8.95	7.95	Starquake	7.95	5.95
Warrior	8.95	7.95	Worms in Paradise	8.95	7.95	Warrior	8.95	7.95
Dynal Scope	7.95	5.95	Worms in Paradise	8.95	7.95	Dynal Scope	7.95	5.95
Borderline's Shadow	8.95	7.95	Worms in Paradise	8.95	7.95	Borderline's Shadow	8.95	7.95

All prices include free fast delivery & sales day despatch, when available. Payment orders welcome. 10% discount on all orders for seven or more tapes or in a value over £40. Computer/PC/25 possible in £240. For up to date news on available & future orders ring (0428) 470000. Free home included for orders over £15.

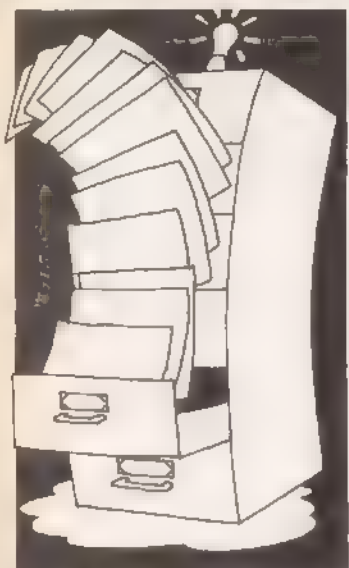
PD5/258

HAVE YOU MET...



ROCK'N' WRESTLE





VERSATILE FILE

by Wail Sabbagh

6) Save data file

This option will save any changes or addition to tape or disc. If these changes are not saved then any update will not be recorded. This option offers the following choices:

- 1) Format new disc.
- 2) Validate disc.
- 3) View disc directory.
- 4) Save file to disc.
- 5) Save file to tape.
- 6) Return to control menu.

7) Edit menu

This menu is concerned with updating the current data file. Records can be edited or deleted, the file name can be changed, file pointers can be zeroed (deleting the file while maintaining current structure), and the password can be changed or deleted (before any chance is made the state of the password, the old password must be stated). This option offers the following:

- 1) Edit one record.
- 2) Delete one record.
- 3) Reset file pointer.
- 4) Change file name.
- 5) Change delete password.
- 6) Return to control menu.

File data

This option will explain to new users the

structure of the file, it also displays the current status of Com File. It gives the following information:

- 1) Name of file.
- 2) Number and name of fields in file.
- 3) Number of records used so far.
- 4) Amount reserved for current data file.
- 5) Type of protection to data file.

9) Calculation menu

This option allows the user to numerically manipulate the data file. It must be noted at this point that non numeric fields are given the value 0. This option offers the following:

- 1) Find total and average of a field.
- 2) Add/delete a percentage - most useful in cases such as adding 15% VAT to all items in file. This option moves to a second level secondary menu which offers addition or subtraction.
- 3) +, -, /, * a constant to a field. A constant value can be added, subtracted, etc to all records. This option also moves to a second level menu offering addition, subtraction, multiplication or division.

10) Exit com file

End the session and returns to Basic.

This week we present your final helping of listing plus the rest of the explanation of the Primary Menu Two.

4) Load/open a new data file

This option simply moves the user to Central menu (primary menu 1).

5) Sort data file

This option will sort the data file in ascending order, upon any field.

```

10070 PRINT PRINTERS#
10080 PRINT PRINT
10090 PRINT:PRESS A KEY TO RETURN TO CONTROL MENU#
10100 GET #
10110 IF RS# THEN GOTO 10100
10120 IF RS# THEN RS# GOTO 10080
10130 GOTO 2000
10140 REM***** MENU*****
10150 PRINT:CHOICE# 7# "EDIT FILE#"
10160 GOTO 10000
10170 PRINT:PRINT
10180 PRINT:PLEASE SELECT CHOICE#
10190 PRINT
10200 PRINT
10210 PRINT
10220 PRINT
10230 PRINT
10240 PRINT
10250 PRINT
10260 PRINT
10270 PRINT
10280 PRINT
10290 PRINT
10300 PRINT
10310 PRINT
10320 PRINT
10330 PRINT
10340 PRINT
10350 PRINT
10360 PRINT
10370 PRINT
10380 PRINT
10390 PRINT
10400 PRINT
10410 PRINT
10420 PRINT
10430 PRINT
10440 PRINT
10450 PRINT
10460 PRINT
10470 PRINT
10480 PRINT
10490 PRINT
10500 PRINT
10510 PRINT
10520 PRINT
10530 PRINT
10540 PRINT
10550 PRINT
10560 PRINT
10570 PRINT
10580 PRINT
10590 PRINT
10600 PRINT
10610 PRINT
10620 PRINT
10630 PRINT
10640 PRINT
10650 PRINT
10660 PRINT
10670 PRINT
10680 PRINT
10690 PRINT
10700 PRINT
10710 PRINT
10720 PRINT
10730 PRINT
10740 PRINT
10750 PRINT
10760 PRINT
10770 PRINT
10780 PRINT
10790 PRINT
10800 PRINT
10810 PRINT
10820 PRINT
10830 PRINT
10840 PRINT
10850 PRINT
10860 PRINT
10870 PRINT
10880 PRINT
10890 PRINT
10900 PRINT
10910 PRINT
10920 PRINT
10930 PRINT
10940 PRINT
10950 PRINT
10960 PRINT
10970 PRINT
10980 PRINT
10990 PRINT
11000 PRINT
11010 PRINT
11020 PRINT
11030 PRINT
11040 PRINT
11050 PRINT
11060 PRINT
11070 PRINT
11080 PRINT
11090 PRINT
11100 PRINT
11110 PRINT
11120 PRINT
11130 PRINT
11140 PRINT
11150 PRINT
11160 PRINT
11170 PRINT
11180 PRINT
11190 PRINT
11200 PRINT
11210 PRINT
11220 PRINT
11230 PRINT
11240 PRINT
11250 PRINT
11260 PRINT
11270 PRINT
11280 PRINT
11290 PRINT
11300 PRINT
11310 PRINT
11320 PRINT
11330 PRINT
11340 PRINT
11350 PRINT
11360 PRINT
11370 PRINT
11380 PRINT
11390 PRINT
11400 PRINT
11410 PRINT
11420 PRINT
11430 PRINT
11440 PRINT
11450 PRINT
11460 PRINT
11470 PRINT
11480 PRINT
11490 PRINT
11500 PRINT
11510 PRINT
11520 PRINT
11530 PRINT
11540 PRINT
11550 PRINT
11560 PRINT
11570 PRINT
11580 PRINT
11590 PRINT
11600 PRINT
11610 PRINT
11620 PRINT
11630 PRINT
11640 PRINT
11650 PRINT
11660 PRINT
11670 PRINT
11680 PRINT
11690 PRINT
11700 PRINT
11710 PRINT
11720 PRINT
11730 PRINT
11740 PRINT
11750 PRINT
11760 PRINT
11770 PRINT
11780 PRINT
11790 PRINT
11800 PRINT
11810 PRINT
11820 PRINT
11830 PRINT
11840 PRINT
11850 PRINT
11860 PRINT
11870 PRINT
11880 PRINT
11890 PRINT
11900 PRINT
11910 PRINT
11920 PRINT
11930 PRINT
11940 PRINT
11950 PRINT
11960 PRINT
11970 PRINT
11980 PRINT
11990 PRINT
12000 PRINT
12010 PRINT
12020 PRINT
12030 PRINT
12040 PRINT
12050 PRINT
12060 PRINT
12070 PRINT
12080 PRINT
12090 PRINT
12100 PRINT
12110 PRINT
12120 PRINT
12130 PRINT
12140 PRINT
12150 PRINT
12160 PRINT
12170 PRINT
12180 PRINT
12190 PRINT
12200 PRINT
12210 PRINT
12220 PRINT
12230 PRINT
12240 PRINT
12250 PRINT
12260 PRINT
12270 PRINT
12280 PRINT
12290 PRINT
12300 PRINT
12310 PRINT
12320 PRINT
12330 PRINT
12340 PRINT
12350 PRINT
12360 PRINT
12370 PRINT
12380 PRINT
12390 PRINT
12400 PRINT
12410 PRINT
12420 PRINT
12430 PRINT
12440 PRINT
12450 PRINT
12460 PRINT
12470 PRINT
12480 PRINT
12490 PRINT
12500 PRINT
12510 PRINT
12520 PRINT
12530 PRINT
12540 PRINT
12550 PRINT
12560 PRINT
12570 PRINT
12580 PRINT
12590 PRINT
12600 PRINT
12610 PRINT
12620 PRINT
12630 PRINT
12640 PRINT
12650 PRINT
12660 PRINT
12670 PRINT
12680 PRINT
12690 PRINT
12700 PRINT
12710 PRINT
12720 PRINT
12730 PRINT
12740 PRINT
12750 PRINT
12760 PRINT
12770 PRINT
12780 PRINT
12790 PRINT
12800 PRINT
12810 PRINT
12820 PRINT
12830 PRINT
12840 PRINT
12850 PRINT
12860 PRINT
12870 PRINT
12880 PRINT
12890 PRINT
12900 PRINT
12910 PRINT
12920 PRINT
12930 PRINT
12940 PRINT
12950 PRINT
12960 PRINT
12970 PRINT
12980 PRINT
12990 PRINT
13000 PRINT
13010 PRINT
13020 PRINT
13030 PRINT
13040 PRINT
13050 PRINT
13060 PRINT
13070 PRINT
13080 PRINT
13090 PRINT
13100 PRINT
13110 PRINT
13120 PRINT
13130 PRINT
13140 PRINT
13150 PRINT
13160 PRINT
13170 PRINT
13180 PRINT
13190 PRINT
13200 PRINT
13210 PRINT
13220 PRINT
13230 PRINT
13240 PRINT
13250 PRINT
13260 PRINT
13270 PRINT
13280 PRINT
13290 PRINT
13300 PRINT
13310 PRINT
13320 PRINT
13330 PRINT
13340 PRINT
13350 PRINT
13360 PRINT
13370 PRINT
13380 PRINT
13390 PRINT
13400 PRINT
13410 PRINT
13420 PRINT
13430 PRINT
13440 PRINT
13450 PRINT
13460 PRINT
13470 PRINT
13480 PRINT
13490 PRINT
13500 PRINT
13510 PRINT
13520 PRINT
13530 PRINT
13540 PRINT
13550 PRINT
13560 PRINT
13570 PRINT
13580 PRINT
13590 PRINT
13600 PRINT
13610 PRINT
13620 PRINT
13630 PRINT
13640 PRINT
13650 PRINT
13660 PRINT
13670 PRINT
13680 PRINT
13690 PRINT
13700 PRINT
13710 PRINT
13720 PRINT
13730 PRINT
13740 PRINT
13750 PRINT
13760 PRINT
13770 PRINT
13780 PRINT
13790 PRINT
13800 PRINT
13810 PRINT
13820 PRINT
13830 PRINT
13840 PRINT
13850 PRINT
13860 PRINT
13870 PRINT
13880 PRINT
13890 PRINT
13900 PRINT
13910 PRINT
13920 PRINT
13930 PRINT
13940 PRINT
13950 PRINT
13960 PRINT
13970 PRINT
13980 PRINT
13990 PRINT
14000 PRINT
14010 PRINT
14020 PRINT
14030 PRINT
14040 PRINT
14050 PRINT
14060 PRINT
14070 PRINT
14080 PRINT
14090 PRINT
14100 PRINT
14110 PRINT
14120 PRINT
14130 PRINT
14140 PRINT
14150 PRINT
14160 PRINT
14170 PRINT
14180 PRINT
14190 PRINT
14200 PRINT
14210 PRINT
14220 PRINT
14230 PRINT
14240 PRINT
14250 PRINT
14260 PRINT
14270 PRINT
14280 PRINT
14290 PRINT
14300 PRINT
14310 PRINT
14320 PRINT
14330 PRINT
14340 PRINT
14350 PRINT
14360 PRINT
14370 PRINT
14380 PRINT
14390 PRINT
14400 PRINT
14410 PRINT
14420 PRINT
14430 PRINT
14440 PRINT
14450 PRINT
14460 PRINT
14470 PRINT
14480 PRINT
14490 PRINT
14500 PRINT
14510 PRINT
14520 PRINT
14530 PRINT
14540 PRINT
14550 PRINT
14560 PRINT
14570 PRINT
14580 PRINT
14590 PRINT
14600 PRINT
14610 PRINT
14620 PRINT
14630 PRINT
14640 PRINT
14650 PRINT
14660 PRINT
14670 PRINT
14680 PRINT
14690 PRINT
14700 PRINT
14710 PRINT
14720 PRINT
14730 PRINT
14740 PRINT
14750 PRINT
14760 PRINT
14770 PRINT
14780 PRINT
14790 PRINT
14800 PRINT
14810 PRINT
14820 PRINT
14830 PRINT
14840 PRINT
14850 PRINT
14860 PRINT
14870 PRINT
14880 PRINT
14890 PRINT
14900 PRINT
14910 PRINT
14920 PRINT
14930 PRINT
14940 PRINT
14950 PRINT
14960 PRINT
14970 PRINT
14980 PRINT
14990 PRINT
15000 PRINT
15010 PRINT
15020 PRINT
15030 PRINT
15040 PRINT
15050 PRINT
15060 PRINT
15070 PRINT
15080 PRINT
15090 PRINT
15100 PRINT
15110 PRINT
15120 PRINT
15130 PRINT
15140 PRINT
15150 PRINT
15160 PRINT
15170 PRINT
15180 PRINT
15190 PRINT
15200 PRINT
15210 PRINT
15220 PRINT
15230 PRINT
15240 PRINT
15250 PRINT
15260 PRINT
15270 PRINT
15280 PRINT
15290 PRINT
15300 PRINT
15310 PRINT
15320 PRINT
15330 PRINT
15340 PRINT
15350 PRINT
15360 PRINT
15370 PRINT
15380 PRINT
15390 PRINT
15400 PRINT
15410 PRINT
15420 PRINT
15430 PRINT
15440 PRINT
15450 PRINT
15460 PRINT
15470 PRINT
15480 PRINT
15490 PRINT
15500 PRINT
15510 PRINT
15520 PRINT
15530 PRINT
15540 PRINT
15550 PRINT
15560 PRINT
15570 PRINT
15580 PRINT
15590 PRINT
15600 PRINT
15610 PRINT
15620 PRINT
15630 PRINT
15640 PRINT
15650 PRINT
15660 PRINT
15670 PRINT
15680 PRINT
15690 PRINT
15700 PRINT
15710 PRINT
15720 PRINT
15730 PRINT
15740 PRINT
15750 PRINT
15760 PRINT
15770 PRINT
15780 PRINT
15790 PRINT
15800 PRINT
15810 PRINT
15820 PRINT
15830 PRINT
15840 PRINT
15850 PRINT
15860 PRINT
15870 PRINT
15880 PRINT
15890 PRINT
15900 PRINT
15910 PRINT
15920 PRINT
15930 PRINT
15940 PRINT
15950 PRINT
15960 PRINT
15970 PRINT
15980 PRINT
15990 PRINT
16000 PRINT
16010 PRINT
16020 PRINT
16030 PRINT
16040 PRINT
16050 PRINT
16060 PRINT
16070 PRINT
16080 PRINT
16090 PRINT
16100 PRINT
16110 PRINT
16120 PRINT
16130 PRINT
16140 PRINT
16150 PRINT
16160 PRINT
16170 PRINT
16180 PRINT
16190 PRINT
16200 PRINT
16210 PRINT
16220 PRINT
16230 PRINT
16240 PRINT
16250 PRINT
16260 PRINT
16270 PRINT
16280 PRINT
16290 PRINT
16300 PRINT
16310 PRINT
16320 PRINT
16330 PRINT
16340 PRINT
16350 PRINT
16360 PRINT
16370 PRINT
16380 PRINT
16390 PRINT
16400 PRINT
16410 PRINT
16420 PRINT
16430 PRINT
16440 PRINT
16450 PRINT
16460 PRINT
16470 PRINT
16480 PRINT
16490 PRINT
16500 PRINT
16510 PRINT
16520 PRINT
16530 PRINT
16540 PRINT
16550 PRINT
16560 PRINT
16570 PRINT
16580 PRINT
16590 PRINT
16600 PRINT
16610 PRINT
16620 PRINT
16630 PRINT
16640 PRINT
16650 PRINT
16660 PRINT
16670 PRINT
16680 PRINT
16690 PRINT
16700 PRINT
16710 PRINT
16720 PRINT
16730 PRINT
16740 PRINT
16750 PRINT
16760 PRINT
16770 PRINT
16780 PRINT
16790 PRINT
16800 PRINT
16810 PRINT
16820 PRINT
16830 PRINT
16840 PRINT
16850 PRINT
16860 PRINT
16870 PRINT
16880 PRINT
16890 PRINT
16900 PRINT
16910 PRINT
16920 PRINT
16930 PRINT
16940 PRINT
16950 PRINT
16960 PRINT
16970 PRINT
16980 PRINT
16990 PRINT
17000 PRINT
17010 PRINT
17020 PRINT
17030 PRINT
17040 PRINT
17050 PRINT
17060 PRINT
17070 PRINT
17080 PRINT
17090 PRINT
17100 PRINT
17110 PRINT
17120 PRINT
17130 PRINT
17140 PRINT
17150 PRINT
17160 PRINT
17170 PRINT
17180 PRINT
17190 PRINT
17200 PRINT
17210 PRINT
17220 PRINT
17230 PRINT
17240 PRINT
17250 PRINT
17260 PRINT
17270 PRINT
17280 PRINT
17290 PRINT
17300 PRINT
17310 PRINT
17320 PRINT
17330 PRINT
17340 PRINT
17350 PRINT
17360 PRINT
17370 PRINT
17380 PRINT
17390 PRINT
17400 PRINT
17410 PRINT
17420 PRINT
17430 PRINT
17440 PRINT
17450 PRINT
17460 PRINT
17470 PRINT
17480 PRINT
17490 PRINT
17500 PRINT
17510 PRINT
17520 PRINT
17530 PRINT
17540 PRINT
17550 PRINT
17560 PRINT
17570 PRINT
17580 PRINT
17590 PRINT
17600 PRINT
17610 PRINT
17620 PRINT
17630 PRINT
17640 PRINT
17650 PRINT
17660 PRINT
17670 PRINT
17680 PRINT
17690 PRINT
17700 PRINT
17710 PRINT
17720 PRINT
17730 PRINT
17740 PRINT
17750 PRINT
17760 PRINT
17770 PRINT
17780 PRINT
17790 PRINT
17800 PRINT
17810 PRINT
17820 PRINT
17830 PRINT
17840 PRINT
17850 PRINT
17860 PRINT
17870 PRINT
17880 PRINT
17890 PRINT
17900 PRINT
17910 PRINT
17920 PRINT
17930 PRINT
17940 PRINT
17950 PRINT
17960 PRINT
17970 PRINT
17980 PRINT
17990 PRINT
18000 PRINT
18010 PRINT
18020 PRINT
18030 PRINT
18040 PRINT
18050 PRINT
18060 PRINT
18070 PRINT
18080 PRINT
18090 PRINT
18100 PRINT
18110 PRINT
18120 PRINT
18130 PRINT
18140 PRINT
18150 PRINT
18160 PRINT
18170 PRINT
18180 PRINT
18190 PRINT
18200 PRINT
18210 PRINT
18220 PRINT
18230 PRINT
18240 PRINT
18250 PRINT
18260 PRINT
18270 PRINT
18280 PRINT
18290 PRINT
18300 PRINT
18310 PRINT
18320 PRINT
18330 PRINT
18340 PRINT
18350 PRINT
18360 PRINT
18370 PRINT
18380 PRINT
18390 PRINT
18400 PRINT
18410 PRINT
18420 PRINT
18430 PRINT
18440 PRINT
18450 PRINT
18460 PRINT
18470 PRINT
18480 PRINT
18490 PRINT
18500 PRINT
18510 PRINT
18520 PRINT
18530 PRINT
18540 PRINT
18550 PRINT
18560 PRINT
18570 PRINT
18580 PRINT
18590 PRINT
18600 PRINT
18610 PRINT
18620 PRINT
18630 PRINT
18640 PRINT
18650 PRINT
18660 PRINT
18670 PRINT
18680 PRINT
18690 PRINT
18700 PRINT
18710 PRINT
18720 PRINT
18730 PRINT
18740 PRINT
18750 PRINT
18760 PRINT
18770 PRINT
18780 PRINT
18790 PRINT
18800 PRINT
18810 PRINT
18820 PRINT
18830 PRINT
18840 PRINT
18850 PRINT
18860 PRINT
18870 PRINT
18880 PRINT
18890 PRINT
18900 PRINT
18910 PRINT
18920 PRINT
18930 PRINT
18940 PRINT
18950 PRINT
18960 PRINT
18970 PRINT
18980 PRINT
18990 PRINT
19000 PRINT
19010 PRINT
19020 PRINT
19030 PRINT
19040 PRINT
19050 PRINT
19060 PRINT
19070 PRINT
19080 PRINT
19090 PRINT
19100 PRINT
19110 PRINT
19120 PRINT
19130 PRINT
19140 PRINT
19150 PRINT
19160 PRINT
19170 PRINT
19180 PRINT
19190 PRINT
19200 PRINT
19210 PRINT
19220 PRINT
19230 PRINT
19240 PRINT
19250 PRINT
19260 PRINT
19270 PRINT
19280 PRINT
19290 PRINT
19300 PRINT
19310 PRINT
19320 PRINT
19330 PRINT
19340 PRINT
19350 PRINT
19360 PRINT
19370 PRINT
19380 PRINT
19390 PRINT
19400 PRINT
19410 PRINT
19420 PRINT
19430 PRINT
19440 PRINT
19450 PRINT
19460 PRINT
19470 PRINT
19480 PRINT
19490 PRINT
19500 PRINT
19510 PRINT
19520 PRINT
19530 PRINT
19540 PRINT
19550 PRINT
19560 PRINT
19570 PRINT
19580 PRINT
19590 PRINT
19600 PRINT
19610 PRINT
19620 PRINT
19630 PRINT
19640 PRINT
19650 PRINT
19660 PRINT
19670 PRINT
19680 PRINT
19690 PRINT
19700 PRINT
19710 PRINT
19720 PRINT
19730 PRINT
19740 PRINT
19750 PRINT
19760 PRINT
19770 PRINT
19780 PRINT
19790 PRINT
19800 PRINT
19810 PRINT
19820 PRINT
19830 PRINT
19840 PRINT
19850 PRINT
19860 PRINT
19870 PRINT
19880 PRINT
19890 PRINT
19900 PRINT
19910 PRINT
19920 PRINT
19930 PRINT
19940 PRINT
19950 PRINT
19960 PRINT
19970 PRINT
19980 PRINT
19990 PRINT

```



Micro Magic



The Amstrad CPC6128



Popular cassette labels

We are giving away an Amstrad CPC6128 128K micro - worth £399 - every seven days until Christmas. Not only that, but every Micro Magic card is a winner - every card wins a runner-up prize of free Special Popular Computing Weekly cassette labels

How to find out if you win this week
To find out if you are a prize winner this week this is what you must do:

- 1) Key in the computer program listing printed here into your micro and Run the program.
- 2) Input your special Micro Magic number as data in the program when requested and press Enter.
- 3) The program will tell you if you have won a prize this week and what it is.
- 4) If you have won a prize you can claim it by filling in the coupon on the back of your special Micro Magic card. Then send



Micro Magic: Week 9 Program listing

the completed card off to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Don't forget to fill in both your name and address, and also both your winning Micro Magic answer from this week and your special Micro Magic number.

5) If you haven't won this week, don't give up hope. Keep your Micro Magic card and use it to find out if you win with next week's Micro Magic computer program. The same card will last you right through to Christmas, so don't throw it away - you could miss the opportunity to win.

This week's winning Micro Magic Numbers: 515896 and 1387480

If you think you've won complete the form on the back of your Micro Magic card and send it to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Micro Magic cards can only be obtained in line with the criteria outlined by Scot Press. Participants are entitled to only one card each. Cards and accompanying documentation can be obtained free of charge by writing to Scot Press, 12-13 Little Newport Street, London WC2H 7PP.

MICROVOX

is a professional sound sampler
(Feargal Sharkey uses one!)

However it doesn't cost £20,000 or even £2,000 but a mere £229.95

You'll need a Commodore 64 or 128 with a disk drive. A MIDI-compatible keyboard is useful, but not essential.

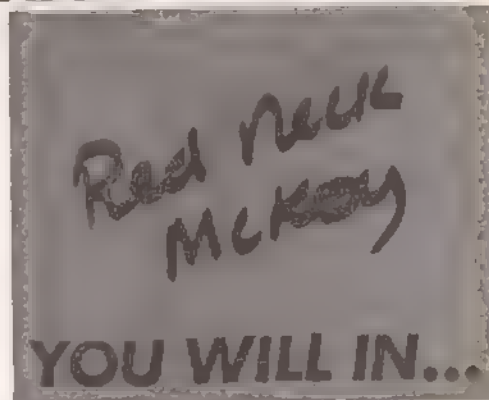
The extensive MICROVOX software allows you to edit waveforms and save sounds to disk. It has a 2000 note sequencer, a digital delay line and much more!

SUPERSOFT

Winchester House, Canning Road,
Wealdstone, Harrow, HA3 7SJ
Tel: 01-861 1166 for further details and
our free catalogue

TORUS

HAVE YOU MET...



YOU WILL IN...

**ROCK'N
WRESTLE**



Breaking into the BIG time!

Do not confuse this product with other inferior products offering less value for money.



At last it's here, the product that lets you do what BBC, C64 and Spectrum owners have been doing for ages. Access to the whole world over the telephone.

SKYWAVE MULTI-PORT

Multiport is supplied with "SKYCOM", a menu-driven, window-based communications ROM package which will drive any standard modem, and lots more! Other ROMs are scheduled for release soon!

SKYCOM is a full "foreground" ROM communications package, and runs without the use of BASIC, thereby releasing large amounts of RAM for the user. One benefit is a 32K+ Spooler.

Just see what the specialists have to say about Multiport:

"A product that should appeal to a large number of Amstrad Users." *Computing Age, Oct 85*
"Includes the most sophisticated communications software available for the Amstrad." *"Multiports sophistication makes it a very attractive product."* *An excellent piece of kit.* *Amstrad Action, Nov 85*

Have you heard about AMSNET, the first Widearea or PRESTEL network? What about Viewfax just for Amstrad owners? Multiport

is the only interface which is Viewfax/Micronet approved, (granted 18.7.85), and you can download software using the telesoftware format developed by us in conjunction with Viewfax 258. This means that you can access the many free Amstrad programs currently on the system and all the other programs about to be put up.

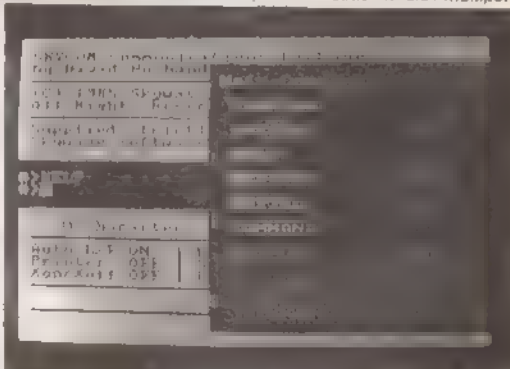
If you have a PROTEK or AMSTRAD interface, or similar make of interface which will not download telesoftware, we are prepared to offer a generous trade in deal against our Multiport and/or Modem Package. Do not miss out! Call our office for details!

Multiport will also access Bulletin Boards, and Telecom Gold. An upgrade is available which permits access to the Open University System for use with O.U. Comms courses.

Multiport has many features, too numerous to mention in one ad, please call our office for an Information Pack which will be sent to you.

Multiport is really 3 interfaces in 1. Its A full RS232 Serial Port, a 24-bit parallel port, & a "Sideways" ROM card, takes 2 ROMs!

Modem Package deals are available for all popular modems and include Modem, Multiport, Manual and Connecting lead. From £169.95 all inc.



Please send me Skywave Multi-port to fit the ☐ Amstrad 464 - ☐ Amstrad 664 *
☐ Amstrad 6128 * ☐ I enclose a cheque for £99.95 ☐ Please debit my Access Barclaycard account * FRS 604 & 6128 with 323899, suitable F.O.C.

☐ Please send me more information

Name _____

Address _____

Postcode _____

(Items sent subject to availability.
Send to Skywave Software,
73 Curzon Road, Bournemouth
BH1 4PW, Dorset, England.
Tel: (0202) 302385.

☐ Please supply Multi-port & modem to fit my Amstrad as above @ £169.95.

☐ I enclose cheque for £169.95, or

☐ Please debit my Access - Barclaycard account as above.

**Skywave
SOFTWARE**

A Nightingale or 2121 Package is currently £169.95. If you already have a modem, Multiport is available for **£99.95** including Manual.

Our policy is of continuous development and support, and to this end, we have set up SKYCLUB on PRESTEL* 25886 # to support our customers with Multiport/SKYCOM. This is the first of a complimentary range of products based around the Multiport. Trade Enquiries: Modern House 0392 213355.



We normally operate a world wide return or post service for our mail order customers with credit cards, Access or Barclaycard. Cheques expect 7 days delivery. Please telephone our sales office for details (0202) 302385 or post the coupon today.

Telecom Gold 72: DTB 10181 Prestel Mail Box 202302385 SKYCLUB on Prestel* 25886 # Telex 295141 TXLINK G Ath MBX 202302385

3-D plotter on Spectrum by Paul Rhodes

This machine-code routine produces a '3D' picture of the graph of a function. Whilst the program draws the graph fairly quickly, the user still has to set up the values to be plotted - a slow job even in machine code, as the pattern generator listed here shows.

The 3D effect is simple but effective, and is produced by using the value to be plotted as a displacement added on to the height of a point on a predetermined diagonal line. So if all values are 0, a parallelogram is produced.

Values to be plotted are stored in a table after the program - the address of the start of the table can be found by: **Peek 50998 + 256*Peek 50999**, and changing the values of these two locations will make the program use any area you choose for the table. The table consists of a 40*40 array: the first 40 bytes are the top line of the graph, the next 40 are the second line, and so on.

To enter the program, either use an assembler or type in the hexloader, enter C738 as the start address and C7C6 as the finish, and type in the bytes from the listing, up to eight at a time (not separated by spaces). Do not enter the checksums until asked for them. Save the code with: **Save "3Dplot" Code 50998,150**

To run the program: **Randomize Usr 51000**. The other listing can be entered

HEX LOADER

```
1 DEF FN B(A$)=CODE A$-48-7*(A$="9")
2 DEF FN H(A$)=FN B(A$(1))*16+FN B(A$(2))
3 DEF FN B$(A)=CHR$(A+48+7*(A>9))
4 DEF FN H$(A)=FN B$(INT (A/16))-FN B$(A-16*INT (A/16))
5 POKE 23658;B:REM CAPS LOCK ON
10 INPUT "START?";LINE A$:LET START=FN H(A$)*256+FN H(A$(3 TO))
15 INPUT "FINISH?";LINE A$:LET FINISH=FN H(A$)*256+FN H(A$(3 TO))
20 FOR A=START TO FINISH STEP 1
25 PRINT FN H$(INT (A/256));FN H$(A-256*INT (A/256));
30 LET C=0
40 INPUT LINE A$:LET A=A$+" "
50 FOR G=0 TO 7:IF A$(G)=" " THEN INPUT LINE A$:LET A=A$+" "
60 LET Z=FN H(A$):LET A=A$(3 TO):POKE A+B,Z:PRINT " ";FN H$(Z):LET C=C+Z
70 NEXT B:INPUT "CHECKSUM?";LINE A$:IF FN H(A$)<>C-256*INT (C/256)
THEN PRINT "CHECKSUM INCORRECT":GOTO 25
80 PRINT: NEXT A
```

HEX FOR 3D GRAPH PLOT, WITH CHECKSUMS

```
C738 CD 07 21 00 40 11 01 40 =47
C73D 01 FF 17 36 00 CD 80 09 =E3
C746 E5 C7 11 70 C7 3F 2B 12 =D9
C74E 2A 76 C7 2B C2 09 C7 2A =F6
C756 C9 C7 21 2C 09 C7 7F 72 =1D
C75E C8 C7 1A 87 76 4A 86 47 =0F
C766 1A 87 C6 11 4F 7F 2B 12 =D2
C76F 12 05 05 CD 05 20 01 C1 =12
C776 2A C9 C7 27 C2 09 C7 2A =F6
C77F C8 C7 30 60 4A 86 47 7E =0F
C786 32 C8 C7 0E 03 CD 80 C7 =06
C78F 11 C8 C7 21 C2 C7 35 2B =B7
C796 20 7E 35 C2 55 C7 09 51 =C0
C79E D9 C9 79 1E 01 C8 7F 2B =AC
C7A6 05 ED 44 1E FF 4F A7 20 =59
C7AE 02 1E 00 16 01 78 C6 7F =E9
```

```
C786 20 05 CD 44 16 FF 47 A7 =61
C79E 20 02 16 00 E5 CD 0A 24 =A8
C7C6 C1 C9 00 00 00 00 7C =06
```

HEX FOR 3D WAVE SET-UP, WITH CHECKSUMS

```
FF50 04 29 0E 20 C5 79 C8 =98
FF60 2D 3E 14 CD 20 2D FF 03 =92
FF6B 31 04 38 C1 E5 70 CD =60
FF70 2D 3E 14 CD 20 2D FF 03 =92
FF7B 00 04 0F 20 A3 05 1F 44 =D7
FF8A A7 04 04 70 C8 05 29 C1 =72
FF8B 2A 36 C7 11 2B 00 A7 ED =F5
FF90 52 00 70 17 20 2A F9 59 =9D
FF9B 19 08 77 0D 20 BE 10 BA =AD
FFA0 C3 36 C7 3B 8D 36 FF 23 =0F
```

in the same way, using FF58 and FFA0 as start and finish. To run it (make sure you already have the 3Dplot routine in

place); **Randomize Usr 65368**.

After a delay of five minutes, a 'wave' pattern should appear.

Assorted Graphics Routines on Sinclair QL by Dave Barnett

Here are a selection of short graphics routines for the QL. None of them break new programming ground, but some of the results are quite interesting.

3-D Cube on Amstrad by Glen Campbell

This program calculates the rotation of a cube in 3D and projects it on to the screen in real-time. The maths is quite ingenious, but the screen does flicker as the cube rotates - however, the result is still quite nice. *n* governs the square size, *m* governs the speed of rotation.

```
10 REMARK "3D CUBE"
20 REMARK "Author: Glen Campbell"
30 REMARK "Date: 1984"
40 REMARK "Version: 1.0"
50 REMARK "Copyright: 1984"
60 REMARK "All rights reserved"
70 REMARK "This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version."
80 REMARK "This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details."
90 REMARK "You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA."
100 REMARK "This program is licensed under the terms of the GNU General Public License."
110 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
120 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
130 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
140 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
150 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
160 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
170 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
180 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
190 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
200 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
210 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
220 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
230 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
240 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
250 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
260 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
270 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
280 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
290 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
300 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
310 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
320 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
330 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
340 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
350 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
360 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
370 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
380 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
390 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
400 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
410 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
420 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
430 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
440 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
450 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
460 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
470 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
480 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
490 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
500 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
510 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
520 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
530 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
540 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
550 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
560 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
570 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
580 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
590 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
600 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
610 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
620 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
630 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
640 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
650 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
660 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
670 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
680 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
690 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
700 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
710 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
720 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
730 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
740 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
750 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
760 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
770 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
780 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
790 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
800 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
810 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
820 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
830 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
840 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
850 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
860 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
870 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
880 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
890 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
900 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
910 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
920 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
930 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
940 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
950 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
960 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
970 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
980 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
990 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
1000 REMARK "If you are not familiar with the GNU General Public License, please visit the website: http://www.gnu.org/licenses/gpl.html"
```

```
10 INK 0,0: BORDER 0: DEG: MODE 2: ORIGIN 320,200:n=150:m=5
20 FOR x=0 TO 360 STEP 1
30 a=n*COS(x):b=0:c=n*SIN(x)
40 d=-c*c/n:e=a*c/n
50 g=f:h=c: i=a-d-n
60 CLS: INK 1,0
70 MOVE (a+d*g)/2,(b+e+h)/2: DRAW -d,-e: DRAW -g,-h: DRAW d,e
80 MOVE (-a+d*g)/2,(-b+e+h)/2: DRAW d,e: DRAW -g,-h: DRAW -d,-e
90 MOVE (a-d*g)/2,(b-c+h)/2: DRAW -a,-b: DRAW -g,-h: DRAW a,b
100 MOVE (-a+d*g)/2,(-b+e+h)/2: DRAW a,b: DRAW -g,-h: DRAW -a,-b
110 INK 1,26: NEXT x
```




Book Microholics
Price £1.95 Micro Any
Supplier Unwin
Paperbacks, 40
Museum Street,
London WC1A
1LU.

A man stands by a micro with disc drives and printer, running a home computer accounts package. He holds a yard or so of printout and says to his wife, "Or in other words, we've spent a small fortune just to tell us we're broke."

Microholics is a collection of cartoons, some sexist, most unfunny, by Richard Howell who, according to the blurb, possesses an 'acute eye'. There's no hint of it here nor sign of the artistic talent.

Strangely, Mr Howell's 'jaundiced look' fails to see as far as opportunistic publishing like this, aimed fairly and squarely at the Christmas gifts market. The theory is that the non-computerate half

of the population will buy it for their micro-obsessed friends in the belief that they will find it funny.

I'm going to make sure my aged aunt knows not to, well in advance.

John Minson



Book Peeks and Pokes
Price £7.95 Micro C84 Supplier
First Publishing, Unit 209,
Horseshoe Road, Horsehoe Industrial Estate,
Pangbourne, Berks.

That owners of the C84 have special needs for *Peeks and Pokes*, in particular those concerned with graphics and sound owing to the machine's inadequate Basic, is one of computing's great truisms.

This book, another of First Publishing's English editions of German Data Becker volumes, deals with these and many other reasons for directly addressing the micro's

memory. In fact, there's so much in its hundred odd pages, culminating in a machine code simulator and discussion of assembly language, that clarity is sacrificed.

Text which definitely reads like a translation plus transposed sections and typographical errors neither help nor instill confidence.

There are many other books which will fill the needs of the novice *Poker* better, although it's just possible more experience programmers will find the odd useful tip here.

John Minson



Book Graphics Programming Techniques on the Amstrad CPC 464
Price £7.95 Micro
Amstrad CPC 464 Supplier
Micro Press, Castle House, 27 London Road, Tunbridge Wells, Kent.

Don't be put off by the fact that this book contains

rather a lot of listings; it's far more serious than it first appears.

Wynford James uses the listings to demonstrate various techniques that can exploit the CPC 464's graphics capabilities starting from Basic.

From the very beginning - the modes of screen display and ink colours - he uses examples and hands-on experience to illustrate the theory, and commendably covers relatively complex topics such as Fill.

He makes a logical progression through the problems and solutions involved in such topics.

There are chapters on shape drawing, animation, graphs and charts and pattern making, avoiding the old myth that graphics from Basic will let you create arcade games or artistic masterpieces.

It's a much more practical approach that will teach a good deal of programming technique.

John Minson

Code Words

Name: Sandy White

Author of *Ant Attack* and *I, of the Mask*

I used to build electronic projects in magazines and when the Sinclair Mk 14 came along I built that - my first computer.

I learnt to program using the manual supplied with it - it was awful! The Mk 14 used a simple National Semiconductor chip and so when the Z80 came along it looked horribly complicated as did Rodney Zaks' book - it was so thick!

I think the best advice for anyone who wants to learn about machine-code pro-

gramming is to begin with just a few simple instructions - gradually try a few more as you need them. It's useful to have someone who already knows a bit of code around to help. Despite its difficulty I'd say the Rodney Zaks' book on the Z80 is a vital purchase.

I don't really use any utilities, I have a *Pictresque Assembler* but don't use it much. More useful is networking Spectrums together to keep the code secure. I also have a hex development system which puts in the code as a memory map and is thus crash-proof.

I don't really play other people's games so I can't comment technically on their work but I do like Jeff Minter.

I think my own greatest achievement was to create a full screen of solid perspective graphics and move them around at ten times a second. My ideal program, my ambition if you like, is a development of what I've already done it would be like looking at reality as filmed by a roving video camera that you could control.

Name: Sandy White

Age: 25

Favourite Programs:

I can't think of any games I really like although I have lots of them. The only exception is *Scrabble* - I set it to play against itself and watch it make crosswords. I like and use *Melbourne Draw* a lot.

Favourite Machines:

I think my favourite machine is the Amstrad just because it's a complete package and has decent sound. I have a couple of Spectrums and look forward to the 128K especially because of the Midi. I also use a Commodore 64 with a Midi package.

Software:

3D Ant Attack, *Zombie*, and *I, of the Mask*.

Hobbies:

Music: I have a DX 7. I play the drums and have fantasies about being a pop star, but I can't play it properly, only by programming music via computer. I also like chemistry, blowing things up and making nasty smells. I also make films - at one time I used to enter them for a children's program called *Screen Test* but they'd always send back a form letter telling me to use a tripod or something. Actually I always did use a tripod. I think it was the chopping people's heads off and spurts of blood from equestry bottles that caused the problems.



MAKE MONEY WITH YOUR MICRO!

you could earn over £50 per week-in your spare time-and you don't need any special programming skills...

Although you may at present only use your micro to play games, your computer is in fact a very sophisticated business machine which you could use to make yourself a very substantial full or part time income. Whatever your age opportunity exists. You may be a schoolboy looking for a school business project. You may have left school and be looking for a viable business idea. You may have a good job, but you would like to have an extra income. Whatever your circumstances, if you want to make some money, you can turn your micro into a money making machine.

FORGET ABOUT GAMES

Of course it is possible to make money as a games designer, but unless you understand machine code, and have lots of original ideas, you might as well leave games designing to the professionals. After all games design is a very competitive area, and there are lots of easier ways to make money with your computer.

HOW TO GET STARTED

We have compiled a special report which provides you with all the information you need to start a small part time business, which you can operate from home, using your micro. The report contains hundreds of business ideas which give you the possibility of earning thousands of pounds from your micro. Each idea is explained in detail, you need only the simplest of programming ability, if you can write simple basic programmes you can operate any of these ideas. (When we say simple basic programmes we mean very simple) some of the ideas require no programming but even the ideas that have the greatest potential are very simple and easy to operate.



ANY COMPUTER WILL DO!

Whatever your micro, Spectrum, Commodore, Electron, Amstrad etc. all the business ideas in this report are applicable to all home micros, no matter how humble or sophisticated.

TRY THIS SIMPLE TEST

When the report arrives select one idea that appeals to you.

Try out the idea for three months, read the directions carefully, start in a small way, remember to begin slowly.

At the end of this trial period calculate how much income you've made, if you're not satisfied with the results simply return the report and we will REFUND YOUR MONEY IN FULL.

You are free to use each idea, to establish your own part or full time business. All the ideas are viable business opportunities, which don't require any special expertise or skill, just a few hours of your time each week can bring you an income of £50 or more. Many of the ideas are capable of development to provide you with a very substantial income indeed, and each idea will grow and develop as you operate the business. The business you start will be totally your own and can be started with just one micro, and perhaps £5 or £10 start up expenses.

WHAT ELSE WILL YOU NEED

You will need to be prepared to work to make your business grow, each idea requires time and effort, and like any one who runs a business you will need to take advantage of the money making opportunities which develop. You will need to adapt to the challenges, and stick at your project.

A telephone would be helpful, and a computer printer would be a great asset (if you do not own a printer don't worry, you can buy one from your first profits).

You won't have to wait, most of the projects can be started within 14 days.

EASY TO FOLLOW

Our special report is easy to follow, all the ideas provided are honest straight forward methods of making money from your micro.

To prove that you can make money from your micro we offer a no quibble money back guarantee. Keep the report for three months, try one or more of the ideas, and if you don't make any money, just return the report. We'll send you a full refund, within three working days, we won't quibble, we'll just return your money.

We are not trying to take advantage of you, we want to present you in a fair way with the information you need to start making money from your micro.

To: P.W. PROMOTIONS

Please send me your report 'MAKING MONEY FROM YOUR MICRO'. I enclose £9.95 in full payment.

Name

Address

Post Code

I understand I am free to use the ideas in this report to start my own full or part time business or business project.

Signed

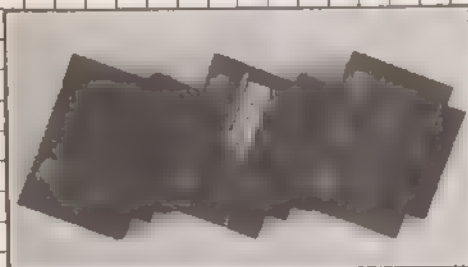
Date

Postal Address: P.W. PROMOTIONS, P.O. BOX 21, MANCHESTER M16 8EA.

5-11 DECEMBER 1985



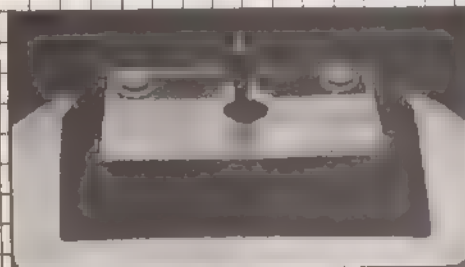
KEMPSTON MICRO ELECTRONICS LTD



JOYSTICK INTERFACE, TRI-STATE + PRO JOYSTICK INTERFACES



FORMULA 1/2 JOYSTICKS



SCOREBOARD JOYSTICK

ORDER FORM

Available direct from Kempston Micro Electronics Fast mail order service. Please send me the following

☐ Formula One Joystick £16.95
☐ Formula Two Joystick £11.95
☐ SCOREBOARD Joystick £19.95

SPECIAL COMBINATION OFFER

☐ Formula One Joystick + Joystick Interface £19.95
☐ Formula Two Joystick + Joystick Interface £17.50

Name _____
Address _____

All prices include VAT and Postage and Packing. Overseas order add £4.00 per annum. Please allow up to 14 days for delivery.
Kempston Micro Electronics Ltd 1-3 Singer Way Kempston Bedfordshire MK42 3AL Tel: 02341 856633



Once Bytten
31 BOWNESS ROAD
LONDON
SE 6 2DG
Phone Orders: 01-698 2811
(Callers by Appointment Only)

COMMODORE	Tape	Disc	SPECTRUM 48K	AMSTRAD	Tape	Disc
Little Dragon People	7.50	(12.95)	Eme	10.95		
Amber Games	7.50	(10.95)	Tomahawk	7.25	30 Grand Prix	7.95 10.95
Search Games	7.50	(10.95)	Robin of Shallock	8.25	30 Boxing	7.95 10.95
2000	7.50	(10.95)	Robin of wood	7.25	The Quill	10.95 15.95
Light Night	7.50	(10.95)	Tasword II	5.95	The Illustrator	10.95 15.95
ALD	7.25	—	Jai Set Wily M	5.20	Arquit	6.05
W. C. & W. W. II	6.50	—	Dambusters	7.25	Jump Jet	6.50 9.50
Commodore	7.25	—	Vamalia	9.55	All the Roland's	6.50
Ramco	6.25	—	Scrabble	2.95	Time Man 1 of 2	6.50
Bomber	7.25	—	The Quill	10.95	Happy Numbers	6.50
Rac	7.50	(10.95)	The Illustrator	10.95	Happy Lancers	6.50
Phone	7.50	(10.95)	The Patch	4.85	Chopper Squad	4.95
Kawabata	7.50	(10.95)	Hung	6.95	Message Andromeda	4.95
Galaxy	7.50	(10.95)	Lord of Midnight	6.95		
Crash	7.50	(10.95)	Select One (12 games)	4.95		
Crash	7.50	(10.95)	Chess the Turk	4.95		
Crash	7.50	(10.95)	Tri na Nog	4.95		
Crash	7.50	(10.95)	Fall Guy	3.95		
Crash	7.50	(10.95)	Hunter Killer	4.95		
Crash	7.50	(10.95)	Gilligan's Gold	3.95		
Crash	7.50	(10.95)	VU File	4.95		
Crash	7.50	(10.95)	VU Oak	4.95		
Crash	7.50	(10.95)	VU 95	3.95		
Crash	7.50	(10.95)	Club Record controller	3.95		
Crash	7.50	(10.95)	Collectors Pack	3.95		
Crash	7.50	(10.95)	Small Business Accts	4.95		
Crash	7.50	(10.95)	Fort	5.95		

DISCS

OUR OWN BRAND - 10 TENS - PLASTIC
LIBRARY CASE LIFETIME GUARANTEE 9.95
3" 5.50
5" 12.95
5" 14.95
5" 16.95
5" 18.95
5" 20.95
5" 22.95
5" 24.95
5" 26.95
5" 28.95
5" 30.95
5" 32.95
5" 34.95
5" 36.95
5" 38.95
5" 40.95
5" 42.95
5" 44.95
5" 46.95
5" 48.95
5" 50.95
5" 52.95
5" 54.95
5" 56.95
5" 58.95
5" 60.95
5" 62.95
5" 64.95
5" 66.95
5" 68.95
5" 70.95
5" 72.95
5" 74.95
5" 76.95
5" 78.95
5" 80.95
5" 82.95
5" 84.95
5" 86.95
5" 88.95
5" 90.95
5" 92.95
5" 94.95
5" 96.95
5" 98.95
5" 100.95

WE SUPPLY DISKS IN BULK TO SOFTWARE COMPANIES, HOSPITALS, CORRUPT FOREIGN POWERS, ALMOST ANYBODY. NO ORDER TOO LARGE OR TOO SMALL. LAST WEEK WE SUPPLIED 30,000 DISKS TO A DISTRIBUTOR AND UNL TO A MAN IN OGDOR. WRITE OR RING FOR OUR PERSONAL QUOTATION.

WE BUY ALL MANNER OF COMPUTER EQUIPMENT FOR CASH. WRITE OR RING FOR OUR HUMBLE OPINION. GUARANTEED SECOND-HAND COMPUTERS ALWAYS AVAILABLE.

SEE YOU AT THE 17th MICROFAIR
ALL OUR PRICES ARE INCLUSIVE OF SPEEDY DELIVERY AND VAT 5.00%

Cheques or Postal Orders payable to AMTEN LIMITED please.
Cash should only be sent by REGISTERED MAIL.
You may pay by VISA card or by phone.

POLE

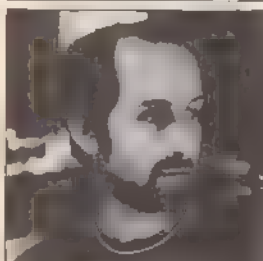
HAVE YOU MET...

Angry Aband
YOU WILL IN...

ROCK'N
WRESTLE



Tony Bridge's Adventure Corner



Deflated

Melbourne House and Adventure International are two of the biggest adventure-writing outfits around at the moment, and much of their success has been gained by taking themselves very seriously in the market-place. Their programs are very clever and can certainly stand a little deflation.

Which is where Delta 4 and Silversoft come in: *Sherlock* and *Robin of Sherwood* are good candidates for a bit of gentle leg-pulling, a challenge very quickly taken up by Fergus McNeill and all the other loonies at Delta 4.

One can only guess at what goes on in a mind obsessed with Penguins and Judith (I haven't met any penguins, myself) but as long as it keeps coming up with parodies such as *Bored of the Rings* and now *Robin of Sherlock* who are we to argue? The jester with his henchperson, The Desperado, has once again turned from thoughts of Jish to extracting the Michael from respected adventures.

There's a certain atmosphere present in all Delta 4 (now marketed by Silversoft) adventures - the player has the definite feeling of being followed, not by a slaving ghoul, at least by a laughing clown. The puzzles included

in the typical jester adventure are not mind-searing, but rather giggle-provoking, and those met in the present program are more of the same: hardly demanding, but nevertheless interesting and creating echoes of other, maybe more well-known adventures.

The location descriptions are also in the usual McNeill mould - right at the start, for example, you'll find that good old Friar Gorbachetnik succumbs to a surfeit of Venison-burgers in a rather spectacular fashion (resulting in 'lots of bits of Friar!'). Not far from here lies the Kentucky Fried Squirrel House, with copious amounts of Squirrel 'n' Fries (but no Penguinburgers), and a definitely dodgy Convent (don't forget to get the habit!).

On and Off

Robin of Sherlock is *Quill'd*, *Illustrated* and *Patch'd* (all acknowledged, I'm glad to say) and thus features good split-screen graphics/text, weird sound effects and the very useful Ram save and load - so progress is very quick. Particularly as the graphics can be switched on and off at will and, anyway, pictures are only drawn on the first visit to a location (unless otherwise instructed).

With the rustic character set and the good use of colour, this is an attractive adventure to play - as I've said, the puzzles are not numerous, and neither are they particularly taxing, but there are many useable objects, and these will keep you occupied for some while. Characters, unusually for a *Quill'd* game, carry on their own existence (it says here), and you are encouraged to indulge in deep conversation with them. Here is the joke at the expense of *Sherlock* - charac-

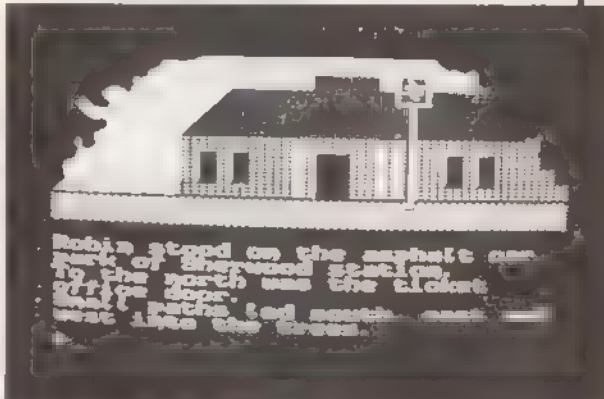
ters may be asked to supply their alibi or to split on another character, but there seemed to be a standard, non-helpful response to my questions, and much of the character 'interreaction' seemed to consist of Dorothy (her from *Wizard of Oz*, don't ask me why) or Marion wandering in and out of the scene. However, it should be possible to ask them about a certain aspect of the adventure, although you run a good risk of getting your ear chewed off for your pains!

The adventure is very pretty, though, with a nice character set, occasionally highlighted in cyan, contrasting with the normal white-on-black. The graphics are quickly-drawn, with much use of repeated blocks (sub-routines as experienced *Illus-*

receive the regular newsheet (rather like a school magazine sent out to old pupils) from this establishment which is for the education of, it seems, rather mature gentlewomen. It's actually an extreme form of torture which said mature gentlewomen submit themselves to as their ideal of a way to spend a holiday, and pretend that they are back in the '30s.

Black on cyan

The Secret of St Bride's is the latest software product of the school, and it's been well received by many magazines. I've just had my first glimpse of the adventure - pretty standard *Quill'd* and *Illustrated* stuff, with a nice black on cyan layout and objects picked out in light col-



Robin of Sherlock from Delta 4

trators will know them) and as there isn't much shading, the whole process is nicely speeded up.

A good laugh

Delta 4 adventures all suffer from the author's devotion to style rather than content: absolutely nothing wrong with this approach as long as you want a good laugh and a few rib-nudging references to some of the old favourites - a good time be had by all, but don't expect brain-teasers of the Level 9 standard.

While we're wandering about in this neck of the adventuring woods (the 'let's treat this thing as a lark' neck), let me mention that dubious seat of learning in County Donegal, St Bride's School. I'm always glad to

ours. You wake up one morning in your dorm, along with the other girls, only to find that the others, dotty as they are, seem to believe that they are actually living in the 1930s - you know of course that this is actually the 80s, so what is going on?

Being a good adventurer, you must find out *The Secret*... By examining everything, many objects will be found and then it is a matter of finding the right place to use the objects. So the adventure can be worked through quite logically, with not too many big surprises. And, thanks to Audiogenic's influence, the program is implemented quite professionally.

I look forward to the next adventure from St Bride's, if only to see another of its bizarre press releases!

Adventure Helpline

Going bananas? If you are stuck in an Adventure with nowhere to turn do not despair - help is at hand

Fill in the coupon, explaining your problem, send it to us, and a fellow adventurer may be able to help

Remember - the system only works if those adventurers who have solved the puzzles get in touch. Every week is Save An Adventurer Today (SAAT) week!

Adventure Problem: _____ on (Micro) _____

Name: _____

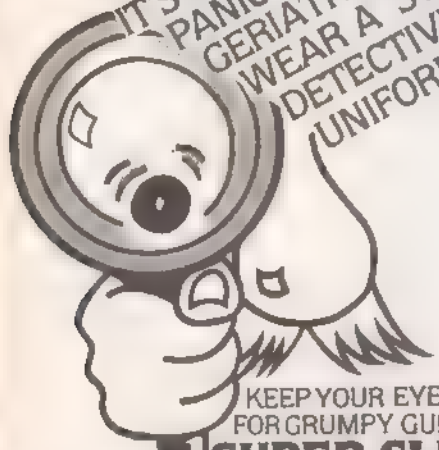
Address: _____

IS IT A
DEFENDER
OF THE WEAK?

NO!

IS IT A
CHAMPION OF
THE DOWN
TRODDEN?
NO!

IT'S THE MOST COWARDLY
PANIC STRICKEN
GERIATRIC EVER TO
WEAR A STORE
DETECTIVES
UNIFORM.



KEEP YOUR EYES OPEN
FOR GRUMPY GUMPHREY
SUPER SLEUTH
AVAILABLE NOW
Gremlin Graphics

Come see us at the 17th MicroFair

BYTE

SPECTRUM

GAME	RRP	PRICE	DUR
FRANKIE G. T. HOLLYWOOD	3.95	5.98	
GRANHAM GOOD & CRICKET	3.95	5.78	
SPY VS SPY	3.95	5.98	
DUNDEE	9.95	6.39	
EXPLODING TIST	3.95	5.29	
NEVER LINDING STORY	3.95	7.42	
HYPERSPORTS	7.95	5.50	
RIGHT HIS WARRIOR	7.95	5.50	
TAU CETY	3.95	6.99	
GYROSCOPE	7.95	5.50	
AZ MATE 3000	4.99	3.95	
FACE UP	9.95	7.50	
TOMAHAWK	9.95	7.40	
HACKER	7.95	5.95	
MARS PORT	9.95	7.50	
BORED OF THE RINGS	6.95	6.25	
MORTY ON THE RUN	7.95	5.95	
HELL MOON	6.95	5.25	
NICK FALDO'S OPEN	9.95	7.50	
ARCH OF YESOD	8.95	6.10	
IMPOSSIBLE MISSION	7.95	5.95	
OMNISCIENT CAN	6.95	5.25	
OTTER IN	9.95	7.50	
E.V. CHROM	9.95	7.40	
SOUTHERN BELLE	7.95	5.95	
SCORPIONS POST	4.99	3.12	
INTERNATIONAL KARATE	6.95	4.25	
FRANK FRANK'S BOKING	9.95	5.25	
DAVEY SHOOTER	8.95	5.25	
COMMANDER	9.95	7.40	
SCORPION WAT II	8.95	6.75	
TERMINAL NOS	6.95	5.25	
PLANETARONS	7.95	5.45	
SHADOW OF LINCOLN	14.95	11.70	
ELITE	14.95	10.25	
ROBIN OF SHERRWOOD	7.95	5.95	
RINGS OF THE WOOD	9.95	6.95	
SEAS OF GLORY	9.95	6.95	
SWORD OF SENGIRY	9.95	6.95	

COMPORDONE

FRANKIE G. T. HOLLYWOOD	9.95	7.50
WAY OF THE DRAGON	9.95	7.50
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45

GAME	RRP	PRICE	DUR
SPY VS SPY	9.95	7.50	
TERMINAL NOS	9.95	7.50	
SKYFOX (baseball)	9.95	7.50	
WIZARDRY	9.95	7.50	
BANDIT	9.95	7.45	
BATTLE FOR BRITAIN	9.95	7.50	
DEATHSTAR INTERCEPTOR	9.95	7.50	
WORLD SERIES BASEBALL	7.50	5.95	
NEVER ENDING STORY	9.95	7.45	
RED MOON	9.95	7.45	
NICK FALDO'S OPEN	9.95	7.50	
BATTLE OF THE BRIDGE	9.95	7.50	
THING ON A SPRING	7.95	5.95	
BEACH HEAD II	9.95	7.50	
PARADISE	7.95	5.95	
WIZARDSLASH	9.95	7.50	
MORTY ON THE RUN	9.95	7.40	
FRANK FRANK'S BOKING	9.95	5.95	
UNDERWORLD	9.95	5.95	
WINTER GAMES	9.95	7.45	
THEY SOLD A MILLION	9.95	7.45	
WINTER GAMES	9.95	7.45	
ARCH OF YESOD	9.95	7.45	
THE TITLE COMPUTER PEOPLE	9.95	7.45	

AMSTRAD

STARWOLF	9.95	7.50
SABREWOLF	9.95	7.45
THEY SOLD A MILLION	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45
WINTER GAMES	9.95	7.45

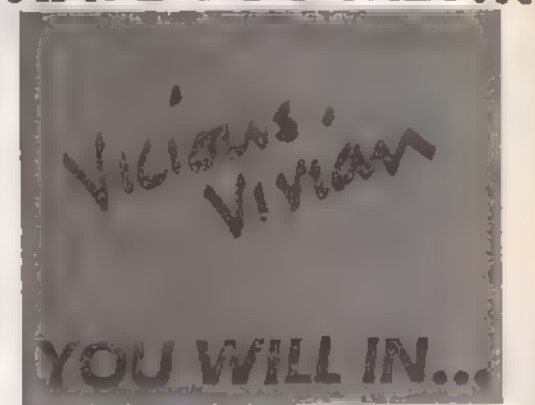
IBM X

HYPER SPORTS 3 KONAMI	14.95	11.00
HYPER SPORTS 2 KONAMI	14.95	11.00
THUNDERBOLT 3 KONAMI	14.95	11.00
THUNDERBOLT 2 KONAMI	14.95	11.00
THUNDERBOLT 1 KONAMI	14.95	11.00
THUNDERBOLT 0 KONAMI	14.95	11.00

SPECIAL OFFER QUICKSHOT II 8.50

ALL PRICES INC. VAT
PLEASE NOTE: 10% FURTHER DISCOUNT
ON ALL ORDERS OVER £100
UNIT 18-19, IMPERIAL STUDIOS,
RIVERSIDE, LONDON SW6
(TEL. 01-731 4807) PD 5640

HAVE YOU MET...



YOU WILL IN...

**ROCK'N
WRESTLE**





AVAILABLE FOR

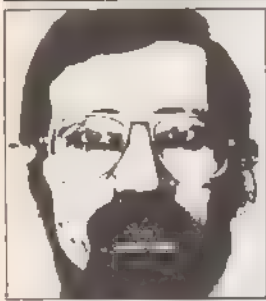
- C64
- AMSTRAD
- ATARI
- BBC/ELECTRON
- VIC 20 + 16K
- PLUS 4 ● C16 + 16K
- SPECTRUM

£7.95 each

TRADE ENQUIRIES: Anirog Software Ltd. Unit 10 Victoria Industrial Park Victoria Road
Dartford Kent (0322) 92513/8

MAIL ORDER: 8 High Street Horley Surrey Horley (02934) 6083 (0322) 91649/92518

Payment By: ACCESS/VISA/BARCLAYCARD CHEQUE or P.O.



Kempston compatible

Colin Waits of Newcastle upon Tyne writes:

Q Is the Spectrum + upgrade kit compatible with a Kempston joystick, on an issue 2 Spectrum, as I have heard there may be a problem?

A All the connection problems with the plus are caused by the interface slot being 'guarded' by a lightly raised portion of the keyboard casing. In order to check whether your existing interfaces will fit into the new slot, it should only be necessary for you to look closely at the back of a plus. ■ terms of other types of compatibility. I have not heard of any problems with it.

Language programming

■ A Taheri of Canterbury, Kent, writes:

Q I have recently obtained a degree in Maths, Stats and Computing, and I would now like to buy a computer to do language programming (Pascal or Fortran).

I can spend up to £1,000, including a printer and monitor. Could you help me find something suitable?

A There are not many Fortran packages produced for the home micro market, but there are Fortran implementations which run under CP/M.

Amstrad's CPC 6128 is CP/M compatible. The micro costs £299 complete with disc drive and monochrome monitor, and £399 complete with disc drive and colour moni-

tor. Amstrad's DMP 2000 printer costs just £159, so you would be well within your price limit.

Commodore's new 128 machine will also run CP/M programs, but ideally you will need its new 1570 disc drive and 1901 80 column monitor. Neither of the latter are yet available, but have been promised before Christmas. For the 128, 1570, 1901, and Commodore's own printer, the MPS 801, expect to pay just under £1,000.

Interestingly enough, there is a Fortran program for the Sinclair QL which doesn't need CP/M. It is from Prospero Software at 190 Castellan, London SW13. A QL would cost £199, and Sinclair's own monitor £299.

Two printers which can be used are Mannesmann Tally's dot matrix (with centronics interface) ■ £250, or Brother's HR5 (RS232 interface) at £157. There is a comparatively large number of languages available for the QL, particularly from Metacomco and HiSoft.

Implementations of Pascal can be found for almost all home micros.

Disabled keyboard

Pamela Sellick, of Abingdon, writes:

Q I have a Spectrum approximately 18 months old. After being on for a short time, the keys in the end columns cease to work. Gradually the other keys also fail. Switching the computer off for a while seems to temporarily remedy the problem. I would like to know whether the problem would disappear by fitting one of the new 'official' Spectrum upgraders' to turn the machine into a Spectrum Plus. If not how can the computer be repaired?

A It sounds to me as if the fault lies in the keyboard membrane, which sits underneath the rubber keypad. ■ would seem as if this has split or worn in such a way that when the machine heats up the connection(s) are broken, thus effectively disabling your keyboard!

The Spectrum up-grade, as it involves fitting a new membrane (owing to the different keyboard layout), should indeed cure your problem.

Dragon repairs

A T Edwards, of Ystradgynlais, Powys, writes:

Q While loading a program into my Dragon 32 it suddenly crashed, after leaving the din plug in the socket I turned the machine on and off. This resulted in a screen with characters strewn all over it. Many attempts to clear the screen have failed.

Do I require a new chip? If so do Dragon Data do such repairs, ■ not where can I get it repaired?

A It sounds to me as if you need a new something, but exactly what is difficult to determine. I think that if you asked Dragon Data about repairing your machine you might have a long wait for an answer!

You could try a firm called Mi-Crows of 49 Wykenham Road Drive, Basingstoke, Hants RG23 8HW (0256 23858). They repair Dragon 32's for £15 plus the cost of parts. Alternatively, try Compusense, PO Box 169, 286a Green Lanes, London N13 5XA (01-882 0681).

Screen messages

I Stokes of Rhyl, Clwyd, Wales, writes:

Q Can you please tell me how to eliminate Program name or Bytes name appearing on the screen? I have assembled programs with a Screen picture only to find that when the next part ■ loading I get these messages displayed across the screen. I have tried to fill the screen with Print statements but to no avail, since it then scrolls the screen up to put out the message. Is it possible to change its colour? I own a Spectrum.

A One very simple way is not to print on the bottom

line of the user screen, but to issue a Print At statement for line 21, column 32 (Print at 20,32). This has the effect of forcing the message to be printed on the 32nd line of the screen.

Then by setting Ink to be the same colour as paper, you will achieve the desired effect without scrolling. It must be remembered that the Print At statement must be executed before each Load statement.

Lynx characters

Terry Stevens of Plymouth, writes:

Q Firstly, I own a Lynx (remember them?). I want to be able to display large characters on the screen (two or even three times normal height.) Is there any way that this can be done?

As you can imagine it's not easy to find much information on my machine these days.

A I may be able to help you here. VDU24 and VDU25 will give you double height characters. For even large ones try Poke & 6273.96 (Poke & 6273.32 puts things back to normal).

Screen copies

M Payne of Coventry, writes:

Q Is there a way of getting a full screen copy of any picture? If you load in a commercial tape, eg, Lunar Jetman, you then have to Break to Copy, which then loses the bottom few lines.

A Firstly, I guess that you have a Spectrum. Secondly, try this: IDLOAD "" SCREEN 20 COPY

When this Basic program is entered and Run, it will search a cassette for a screen picture, which when loaded is then dumped to the printer (intact).

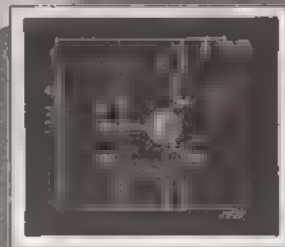
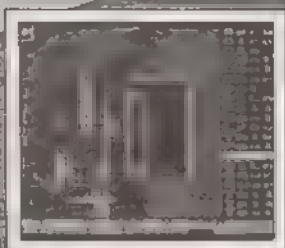
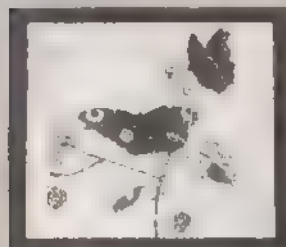
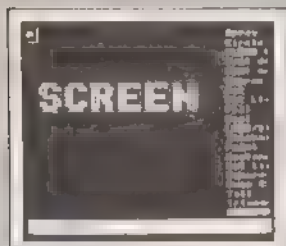
If you want to copy to cassette, then use Save " " Screen instead of Copy on line 20.

TOUCH PAD SCREEN ARTIST

SCREEN ARTIST

Cumana's new, improved Touch Pad with Screen Artist forms the perfect combination of state of the art technology and human creativity – an easy-to-use graphics plotting aid with a brand new and powerful software library with new titles being added on a regular basis.

Screen Artist software has a host of ingenious features for producing creative designs and graphics, illustrations, plans and diagrams, for an infinite variety of applications from interior designs, designing electrical circuits and creative pictures. With Screen Artist, the bounds of artistic skill and invention are virtually limitless.



SCREEN ARTIST (DRAWING COMMANDS)

Architect: Snap Colours, Fast Change

Circle, Triangle, Rectangle, Square, Ellipse

Dotted Line, Solid Line

Continuous Dotted and Solid Line

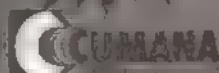
Grid Functions for rectangular patterned effects

Character generator routine including character, underline, insert, delete and multi-functioning to create easily new ones and to call them in for inclusion in your developing masterpiece!

Save and load routines for character generator and drawing routines

Variable text size with rotate function and shadow effect

Print routine – dump graphical images onto any Epson compatible printer.



Free home name in memory
Preston, Lancashire, England, Great Britain
Telephone: 0772 10004, Telex: 340000
Telex: 340000, Telex: 340000

There's a Dealer near you

AVON

SOFTWARE PLUS COMPUTERS
12 YORK STREET
BATH
Tel: (0225) 61676

PL105

BIRMINGHAM

D.G. MICROTEK ELECTRONICS
1908 DUDLEY ROAD
WINSON GREEN
BIRMINGHAM
Tel: (021) 454 4697

PL104

ESSEX

MINNIE MICRO COMPUTER STORE
12 EASTERN ESPLANADE
SOUTHEND, ESSEX
Tel: (0702) 615809

PL103

ESTUARY PERSONAL COMPUTERS
ONE CHARTWELL NORTH
VICTORIA CIRCUS SHOPPING CENTRE
SOUTHEND ON SEA
Tel: (0702) 614131

PL104

GLASGOW

THE COMPUTER DEPOT
205 BUCHANAN STREET
GLASGOW G1 2JZ
Tel: (041) 332 3944

PL100

HEREFORDSHIRE

HONEYSETT COMPUTERS
17 UNION STREET
HEREFORD HR1 2BT
Tel: (0432) 279404

PL101

HERTFORDSHIRE

BROADWAY COMPUTER CENTRE
75 QUEENS ROAD
WATFORD, HERTS
Tel: (0923) 43301

PL106

HUMBERSIDE

THE COMPUTER CENTRE
(HUMBERSIDE)
26 ANLABY ROAD
HULL
NORTH HUMBERSIDE
0482 26297

PL102

KENT

AMROG COMPUTERS
29 West Hill
Dartford
Kent
Tel: (0322) 91649

PL107

dgh

software centre

10 NORTH STREET,
ASHFORD, KENT
Tel: (0233) 32597

PL108

MICROWAY COMPUTERS

39 HIGH STREET
RAINFHAM, KENT
Tel: (0634) 376782

PL112

LANCASHIRE

SOUND AND VISION
11 SILK STREET
LEIGH, LANCs WN7 1AW
Tel: (0942) 673688

PL100

LEEDS

WUDDOWS

NORTHWOOD HOUSE
NORTH STREET
LEEDS LS1 2JA
Tel: (0532) 458800

PL103

LEICESTERSHIRE

DIMENSION COMPUTERS LTD
27-29 HIGH STREET
LEICESTER
Tel: (0533) 57479

PL100

LIVERPOOL

BLUE CHIP
77 ALLERTON ROAD
LIVERPOOL L18 2DA
Tel: (051) 722 3837

PL117

LONDON

SILICA SHOP
1-4 THE MEWS
HATHERLEY ROAD
SIDCUP, KENT
Tel: 01-309 1111

PL107

VIC ODDENS
6 LONDON BRIDGE WALK
LONDON SE1
Tel: 01-483 1988

PL108

GAMES WORLD
129 KING STREET
HAMMERSMITH
LONDON W6
Tel: 01-741 4467

PL114

SOFTWARE STORE LTD
35 LONDON ROAD
LONDON SW17
Tel: 01-685 1476

PL100

LOGIC SALES
19 THE BROADWAY
THE BOURNE, SOUTHGATE
LONDON N14
Tel: 01-882 4942

PL100

NOTTINGHAM

MPC SOFTWARE
72 JULIAN ROAD
WEST BRIDGFORD
NOTTINGHAM NG2 5AN
Tel: (0602) 828186

PL109

OXFORDSHIRE

CLUB COMPUTERS
6 EVANS YARD
BICESTER
OXFORDSHIRE
Tel: (0865) 248600

PL106

S. WALES

MAPPLE MICRO ASSOCIATES
FREEPOST
PO BOX 17
CWMBRAN
GWENT NP44 3YT

PL106

WARWICKSHIRE

FAST FORWARD COMPUTER STORE
29 SMITH STREET
WARWICK
Tel: (0925) 492804

PL104

YORKSHIRE

THE COMPUTER STORE

10 CLEVELAND STREET
DONCASTER
Tel: (0302) 25260

PL110A

THE COMPUTER STORE

26 TEALL STREET
WAKEFIELD
Tel: (0924) 384983

PL111

THE COMPUTER STORE

8 BRIDGE STREET
YORK
Tel: (0904) 646934

PL110

THE COMPUTER STORE

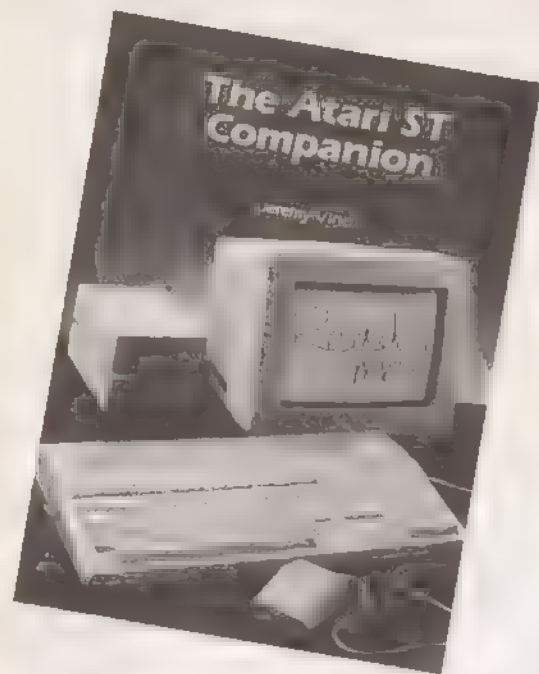
40 TRINITY STREET ARCADE
LEEDS
Tel: (0532) 429284
(open now)

PL110

YORK COMPUTER CENTRE
7 STONEGATE ARCADE
YORK
Tel: (0904) 641862

PL110

Discover the Atari ST



Jeremy Vine's **Atari ST Companion** will tell you all you need to know if you're wondering whether to invest in the most talked-about new micro of 1985 — the Atari 520ST. Jack Tramiel's new wonder-machine offers you the "power without the price" — a 68000-based window, icon, mouse micro with the GEM graphics environment from Digital Research, all for £750.

The **Atari ST Companion** has been written with the benefit of full hands-on experience of the machine. Jeremy Vine begins with an overall look at the ST, followed by a detailed introduction to the GEM (Graphics Environment Manager) system. This offers facilities comparable with the much more expensive Apple Macintosh, including windows, pull-down menus and the facility to use a mouse to point to icons to replace typed commands.

Also covered is the Atari Intelligent Keyboard Controller, the very sophisticated sound system of the ST (which includes the industry-standard MIDI interface), the TDS operating system and the graphics LINE "A" interface.

So, whether you are already the proud owner of a new ST, or just thinking of learning more about this revolutionary new micro, send off today for this great new Sunshine book.

Please send me _____ copies of **The Atari ST Companion** @ \$9.95 each.

☐ I enclose a cheque/postal order for £ _____ payable to **Scot Books**

☐ Please debit my Visa/Access card no _____ valid from _____ expires on _____

Signed _____

Name _____

Address _____

Send to: **Sunshine Books, 42-43 Little Newport Street, London WC2H 7PP.**

C & F ASSOCIATES

BBC	RRP	Our Price	SPECTRUM	RRP	Our Price
ENTHUS 4 (80 TRACK)	16.95	14.95	MARSPOOT FAIRLIGHT	9.95	8.90
BLUE RIBBON GAMES			RED ARROWS	9.95	8.90
DISK 1 (40 TRACK)	9.95	7.50	THE ARTIST	12.95	8.80
DISK 2 (40 TRACK)	9.95	7.50	STARWARR	7.95	5.95
COMBAT LYNX	8.95	7.75	AQUAPLANE	4.95	1.95
BOFFIN	12.95	8.95	HARRIER ATTACK	4.95	4.50
CASTLE QUEST	7.50	1.05	THAT'S THE SPIRIT	7.95	5.20
FELIX & THE FRUIT MONSTERS	8.95	5.50	RED MOON	0.95	3.90
RED MOON	7.95	1.95	ATIC ATAC	2.50	4.50
SWOOP	8.95	2.50	NIGHTSHADE	8.95	1.25
FELIX & THE EVIL WEEVILS	7.95	5.95	UNDERWORLD	0.95	2.95
ATIC ATAC	8.95	7.25	WORM IN PARADISE	0.95	7.25
TEMPEST	7.95	2.50	KNIGHT LORE	9.95	7.25
KILLER GORILLA	7.95	7.25	SAM STOUT SAFE BREAKER	6.95	5.25
ALIEN 8	7.95	7.50			
RURBLE TROUBLE	9.95	7.25	AMSTRAD		
WORM IN PARADISE	7.95	2.50	RED ARROWS (DISK)	12.95	7.50
GUMBLE DEC	8.95	7.25	RED ARROWS	9.95	7.25
KNIGHT LORE	8.95	7.25	WIZARDS LAIR	8.95	6.95
SABRE WOLF	7.95	2.50	COMBAT LYNX	8.95	5.95
GHOULS	7.95	2.50	ROCCO	8.95	5.95
			ALIEN 8	9.95	7.25
ELECTROM			RED MOON	0.95	3.90
NIGHTMARE MAZE	2.50	2.25	DUN DARACH	8.95	2.25
BOFFIN	8.95	7.25	BRIAN BLOODAXE	8.95	5.95
COMBAT LYNX	8.95	6.75	PROJECT FUTURE	8.95	5.95
CASTLE ASSAULT	2.50	2.25	TASWORD 484 (CLASS)	10.95	16.95
			TASWORD 484 (D)	24.95	19.95
SPECTRUM			TASWORD 6126 (D)	24.95	19.95
JET SET WILLY 2	6.95	5.50	COMMODORE 64		
WIZARDS LAIR	9.95	1.95	IMHOTEP	9.95	6.25
ALIEN 8	8.95	7.25	RED ARROWS	8.95	6.25
ABU SIMBEL	7.95	6.95	BLACKWYCHE	8.95	6.25
NUMBERS OF YESOD	10.95	7.25	WIZARDS LAIR	8.95	6.25
A VIEW TO A KILL	8.95	7.25	WANTED MONTY MOLE	7.95	5.25
DUN DARACH	8.95	7.25	HARRIER ATTACK	6.95	4.50
HERBERT'S DUMMY RUN	7.95	5.95	ENTOMBED	9.95	5.25
ROCCO	8.95	5.90	THING ON A SPRING	7.95	5.95
GYRON	8.95	5.90	COMBAT LYNX	8.95	6.25
EVERY ONE'S A WALLY	7.95	5.95	SHADOWFIRE	9.95	5.90
COMBAT LYNX	8.95	4.75	WIZARDRY	9.95	7.25
MONTY ON THE RUN	8.95	6.00	RED MOON	6.95	5.25
SHADOWFIRE	7.95	5.50	NOODS OF YESOD	9.95	5.25
BEACHHEAD	8.95	5.25			
AIRWOLF	8.95	5.25	COMMODORE C16/PLUS 4		
JUMBLY	8.95	2.50	DOCK'S DILEMMA/SWORD OF DESTINY		
MONTY IS INNOCENT	8.95	5.25	C16/PLUS 4 THE TWO		
WANTED MONTY MOLE	8.95	5.25			
BEAXY & THE EGG SNATCHERS	8.95	7.50			

PLEASE NOTE: BBC DISC SOFTWARE GUARANTEED FOR ACORN DFS ONLY

ALL PRICES INCLUDE VAT AND POSTAGE & PACKING
(Overseas Orders add £1.00 per item)

CHEQUES/PO PAYABLE TO: C & F ASSOCIATES
AND SEND TO

C & F ASSOCIATES (PCW), PO BOX 2, BIDEFORD EX39 3RE

HAVE YOU MET...

*Georgiano
Greg
- The blonde
Hero.
YOU WILL IN...*

**ROCK'N
WRESTLE**



Amstrad

1	(-)	Yie Ar Xing Fu	(Imagine)	£7.95
2	(3)	Grand Prix 3D	(Software Invasion)	£9.95
3	(1)	They Sold A Million	(Hit Squad)	£9.95
4	(6)	Finders Keepers	(Mastertronic)	£1.99
5	(6)	Soul Of A Robot	(Mastertronic)	£1.99
6	(2)	Formula One Simulator	(Mastertronic)	£1.99
7	(5)	Radi!	(US Gold)	£9.95
8	(10)	Way Of The Exploding Fist	(Melbourne House)	£9.95
9	(-)	Nonterraguous	(Mastertronic)	£1.99
10	(-)	Frank Brunos Boxing	(Elite)	£8.95

Atari

1	(1)	Mercenary	(Norwegian)	£9.95
2	(-)	Action Biker	(Mastertronic)	£1.99
3	(7)	Electra Glide	(English Software)	£8.95
4	(4)	Rescue On Fractalus	(Activision)	£9.95
5	(-)	Pole Position	(DataSoft/US Gold)	£9.95
6	(2)	Super Zaxxon	(US Gold)	£9.95
7	(4)	Ballblazer	(Activision)	£9.95
8	(-)	Bounty Bob Strikes Back	(Big 5/US Gold)	£9.95
9	(-)	Red Moon	(Level 9)	£9.95
10	(3)	Chop Suey	(English)	£9.95

BBC

1	(1)	Strike Force Harrier	(Microsoft)	£9.95
2	(10)	Repton 2	(Superior Software)	£9.95
3	(2)	Match Day	(Ocean)	£9.95
4	(8)	Bored Of The Rings	(Silversoft)	£8.95
5	(8)	Combat Lynx	(Durell)	£9.95
6	(7)	Revs	(Acornsoft)	£14.95
7	(5)	Jump Jet	(Alderg)	£9.95
8	(4)	Beach Head	(Access/US Gold)	£9.95
9	(3)	Elite	(Acornsoft)	£12.95
10	(-)	Computer Hits (10)	(Bean Jolly)	£9.95

Commodore 64

1	(1)	Winter Games	(US Gold)	£9.95
2	(-)	Rambo	(Ocean)	£9.95
3	(-)	Fight Night	(US Gold)	£9.95
4	(-)	Commando	(Elite)	£9.95
5	(3)	Last V8	(Mastertronic)	£1.99
6	(-)	Little Computer People	(Activision)	£9.95
7	(4)	Summer Games 2	(Epyx/US Gold)	£9.95
8	(8)	Arcade Hall Of Fame	(US Gold)	£9.95
9	(-)	Racing Destruction Set	(Alderg)	£12.95
10	(6)	They Sold A Million	(Hit Squad)	£9.95

Spectrum

1	(-)	Commando	(Elite)	£7.95
2	(1)	Elite	(Firebird)	£14.95
3	(-)	Tomahawk	(Digital Integration)	£9.95
4	(3)	Back To Skool	(Microsphere)	£6.95
5	(2)	International Karate	(System 3)	£6.50
6	(9)	Beach Head 2	(Access/US Gold)	£9.95
7	(5)	Swords And Sorcery	(PSS)	£9.95
8	(15)	Daley Thompson's Super Test	(Ocean)	£6.95
9	(4)	Saboteur	(Durell)	£9.95
10	(-)	They Sold A Million	(Hit Squad)	£9.95

Bubbling Under

Gyroscope/Spectrum (Melbourne House); Computer Hits (8)/Spectrum (Bean Jolly); Scarabeus/C64 (Alderg); Tau Ceti/Spectrum (CRL); Waterloo/C64/Spectrum (Warmaster); Imhotep/C64 (Ultimate); 1 of the Mask/Spectrum (Electric Dreams); Spike/Spectrum (Firebird); Battle (3) Britain/Amstrad (PSS).

All figures compiled by Gallup/Microscope

Top Twenty

1	(-)	Commando (Spectrum/C64)	Elite
2	(1)	Elite (Spectrum/C64/Spectrum)	Acornsoft
3	(4)	Winter Games (C64)	US Gold
4	(-)	Rambo (Spectrum/C64)	Ocean
5	(3)	They Sold A Million (Spectrum/C64/Amstrad)	Hit Squad
6	(-)	Fight Night (C64)	US Gold
7	(2)	Formula One Simulator (Various)	Mastertronic
8	(-)	Tomahawk (Spectrum)	Digital Integration
9	(8)	Computer Hits (10) (Various)	Bean Jolly
10	(16)	Back To Skool (Spectrum)	Microsphere
11	(6)	Way Of The Exploding Fist	Melbourne House
12	(11)	Beach Head 2 (Spectrum, C64, Amstrad)	Access/US Gold
13	(5)	Finders Keepers (Spectrum, C64, Amstrad)	Mastertronic
14	(10)	Monty On The Run (Spectrum/C64/Amstrad)	Gremlin Graphics
15	(10)	BMX Racers (Spectrum, C64)	Mastertronic
16	(15)	International Karate (Spectrum)	System 3
17	(12)	Frank Brunos Boxing (Spectrum, C64, Amstrad)	Elite
18	(9)	Action Biker (Spectrum, C64)	Mastertronic
19	(-)	Arcade Hall Of Fame (Spectrum, C64)	US Gold
20	(7)	Robin Of The Wood (Spectrum, C64)	Odin

Figures compiled by Gallup/Microscope

Readers' Chart No 53

1	(1)	Way Of The Exploding Fist (Spectrum/C64/Amstrad/Melbourne House)	The Edge
2	(2)	Fairlight (Spectrum)	Imagine
3	(3)	Hypersports (Spectrum/C64)	Gremlin Graphics
4	(5)	Monty on the Run (Spectrum/C64)	Level 9
5	(4)	Red Moon (Spectrum/C64/Amstrad/BBC/Electron)	Firebird/Acornsoft
6	(-)	Elite (Spectrum/C64/BBC/Electron)	Ultimate
7	(8)	Nightshade (Spectrum)	Beyond
8	(7)	Spy vs Spy (Spectrum/C64)	Ocean
9	(-)	Daley Thompson's Super Test (Spectrum)	Sub-Logic
10	(-)	Flight Simulator II (C64)	

Winning Phrase No 53: "Why do I try? I fail so often" from Darren Gregory, Bispham, Blackpool, Lancs who receives (to his surprise no doubt) £25. Honourable mentions to Andrew Gallagher of Altringham, Cheshire with "Who has tight fist on Soft Aid?" and Andrew Toy of Crawley, Sussex with "Terry Wogan raises lots of gell".

Now voting on week 55 - £25 to win

Each week Popular is compiling its own special software top ten chart - compiled by YOU.

And each week we will send £25 to the person who sends in, with their chart votes, the most original (witty, neat or clever - but never rude) phrase or sentence made up from the letters (you don't have to use them all) in the titles of the top three programs in this week's Readers' Chart, published above.

You can still vote in the chart without making up a slogan - but you won't be in with a chance of winning the prize.

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to: Top 10, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Voting for Week 55 closes at 2pm on Wednesday December 11 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges' decision is final. Only one entry per individual per week will be allowed.

Name	My top 3: Voting Week 55
Address	1
.....	2
.....	3
My phrase is:	



	AMSTRAD	BBC/B	CBM 64	EINSTEIN	SPECTRUM	QL
CLUEDO	JAN 8	JAN 86	*		*	FEB 86
MONOPOLY	JAN 8	*	*	*	*	FEB 86
SCALEXTRIC	FEB 86		* †		JAN 22	
SCRABBLE	*	*	*	*		*
RRP cass	9.95	12.95	12.95		9.95	14.95 (cart)
disk	14.95	14.95	14.95	15.95		

* Available Now! † CBM 64 Scalextric, £9.95 (cassette) Dates are approximate

MAR. ORDER: Please send cheque or Postal order to: LEISURE GENIUS, 3 Montagu Row, London W1H 1AB.
Please send me the following items as marked, for the Computer.

	CASS	DISK	NAME
CLUEDO	<input type="checkbox"/>	<input type="checkbox"/>	_____
MONOPOLY	<input type="checkbox"/>	<input type="checkbox"/>	ADDRESS _____
SCALEXTRIC	<input type="checkbox"/>	<input type="checkbox"/>	_____
SCRABBLE	<input type="checkbox"/>	<input type="checkbox"/>	_____ POST CODE _____

(please tick)

PCW

Software by...

**Leisure
Genius**

3 Montagu Row, London W1H 1AB.



NOW AVAILABLE FROM SELECTED



& WHSMITH
STORES

AND AT OTHER GOOD STORES.

CLUEDO™ trade name and copyright licensed by Waddington Games Ltd.
MONOPOLY™ is a registered trademark of Parker Brothers Ltd.
Waddington Games Ltd. SCALEXTRIC™ is a registered trademark of
Thomas H. Morgan Ltd. SCALEXTRIC™ is a registered trademark and copyright licensed by
J. W. Sellar & Sons Plc. All copyrights reserved. LEISURE GENIUS™ is
a registered trademark of Winchester Holdings Ltd.

FAST COMPUTER REPAIRS

VIDEO VAULT INTERNATIONAL 10★ REPAIR SERVICE

THE NO. 1
REPAIR CENTRE
IN THE U.K.

WHILE YOU
WAIT SERVICE
CALL FOR APPOINTMENT

24 HOUR
TURNAROUND



HOW TO SEND YOUR COMPUTER

Just parcel your computer in suitable wrapping enclosing £19.95 for Spectrum repairs, please do not send power supplies. Commodore computers, just send £1.75 (U.K. £1.10 for £5.50 Europe/Scandinavia) with your address or phone number and we will contact you same day by phone or letter with quote. If you prefer, please call us and we will give you a quote over the phone. We aim to please. That's what made us the most reliable service centre

SPECTRUMS REPAIRED for only £19.95 including PARTS • INSURANCE and P & P. NO HIDDEN EXTRAS

We don't give you a between price and let you guess the bill, we give you a 100% fixed price NO extras. We don't need to boast about our service. We have 1000's of customers from all over the world highly delighted with our service and help. Only 15 minutes from Manchester Centre BBC, Commodore 64, Vic 20, also repaired call us for details

Don't wait weeks for your repair, we turn around all computers in 24 hrs. All repairs carry a full 3 month guarantee, plus on every Spectrum we repair, we send you a free game worth £5.95 for your enjoyment and pleasure.

- While you wait service by Professional Computer Engineers
- 3 month written guarantee on all repairs
- International Repair Company. We repair computers from all over the world
- All computers sent by Mail order turned around in 24 hrs
- Most Spectrums repaired within 45 minutes
- All Mail order repaired for return journey
- Keyboard faults only £8.95
- School repairs undertaken, discount available
- Free software with each Spectrum repaired
- Over 10 years experience working with computers. All computers fully tested

TRADE
REPAIRS
most
welcome

(SPARES AVAILABLE THROUGH OUR D.I.Y. SECTION.)

BEST SERVICE — BEST PRICES!

COMMODORE 64 * NOW REPAIRED *

Call us for details or purchase the I.C.'s from our D.I.Y. section

WE ONLY USE SINCLAIR
SPARES. FITTED BY OUR
QUALIFIED STAFF!

* SPECIAL KEYBOARD UPGRADE

Why not upgrade your Spectrum into a new keyboard, we can upgrade your old Spectrum into a new D.K. Tronics keyboard

for only £31.50
Normal retail price £49.95 without fitting

ORDER
NOW!

SPECIAL OFFER!

YOU CAN'T REFUSE

16K to 48K Upgrade
Upgrade your 16K Spectrum to 48K Spectrum for only £19.95 fitted including V.A.T. and P & P.

Limited offers while stocks last. Makes a great Christmas present. To order the upgrade kit, (only £17.95.)



P.S. We would like to wish all our customers past and present a very Merry Christmas and a happy New Year

THERE'S
NOBODY QUICKER
IN THE BUSINESS AT PRICES
THAT CANNOT BE
BEATEN

THE
LOGICAL
CHOICE

VideoVault D.I.Y. CORNER

We regret we cannot show all the components available. Just give us a call and we can quote you over the phone, delivery by return.

Spectrum Parts

256K Chip	3.50
4164 Pans	1.00
271052	0.80
Transistor 27X 515	0.30
Transistor 27X 515	0.50
Power Supply Unit	7.95
Heat Sinks	0.25
16K to 48K Upgrade Kit	17.95
54 pins 16 40 Pin	18.50p
Cassette Leads	3.50
T.V. Lead	3.50

Commodore 64 Chips

6225	23.00
6510	23.00
6581	23.00
101227 02	23.00
901224 01	23.00
901225 01	23.00
6513	23.00
4164 Pans	3.00
Power Supply Unit	29.00

All prices + P & P. £1.50
But include V.A.T.

TRADE
ORDERS
WELCOME

VIDEOVAULT HEALTH WARNING!

Sending your computer to any other Repair Centre can seriously Damage Its Health

STOP
PRESS

VIDEOVAULT LTD will shortly be opening their New Branch in Manchester City Centre for which you wait computer repairs which this space for details of special open day offers

OPEN
7
DAYS
A
WEEK

VideoVault Ltd.

Telephone: Glossop (STD 04574) 66555/67761
140 High St. West, Glossop, Derbyshire, England

FREE GAME WORTH
£5.95 WITH
EACH SPECTRUM
REPAIR.

SPECIAL

FROM 85p EACH

5 1/4" DS/DD FLOPPY DISKS

- LIFETIME GUARANTEE
- HUR RINGS
- FREE 56K-10 CASE
- NT BRANDED - FUJI FILM

PRICE PER BOX

	1-4	5-9	10+
£9.50	£8.90	£8.50	

8" DS/DD disks 100 each min order 50

AUTHORISED: Sanyo - Philips - Alternative - Gage - Easylink - Minneman - Just - Dealers

FROM 70p EACH

5 1/4" DS/DD UNBRANDED FUJI FLOPPY DISKETTES

with envelopes and write protect tabs

For single and double sided drives 80p each

Minimum order 50 each

3.5in memories (10 per box)

Price per box

	1-4	5-9	10+
£20.00	£27.00	£26.00	

HOW TO ORDER: To total add 50p per box of 10 postage then add 15% VAT and send cheques or postal orders

Newtrends Technology Ltd
10/14 Hollybush Gardens
London E2 9OT
Tel: 01-729 4899

YOUR PERSONAL CENTRONICS PRINTER

£89 plus vat

plus £8 p+p



- DRAFT MATRIX PRINT
- NEAR LETTER QUALITY
- SUBSCRIPT SUPERSCRIPT
- CONDENSE EMPHASIZE
- 96 CHAR+48 EURO+16 MATHS
- GRAPHICS
- OPTIONAL TRACTOR

128 Kbytes 16 Lines 100 BPS

ROCK HALL

TEL: (0533) 313531

CABLES

UL Coaxial cable	£7.95
UL Coaxial cable	£4.95
UL Coaxial cable	£3.95
UL Coaxial cable	£3.95

TV Leads
Cable TV leads
Cable TV leads
Cable TV leads

DE: Coaxial cable
DE: Coaxial cable
DE: Coaxial cable
DE: Coaxial cable

TECH LINK LTD
31 Salisbury Rd, St. Annes, Bristol, BS4 4EL
Tel: (0272) 715370 24-hour service
ALL PRICES INCLUSIVE OF POST PACKING

3" DISKS

£39 FOR 10

INCLUSIVE OF VAT & DELIVERY

3 1/2" DISKS

OS 11511
SS 11511

£35 for 10
£25 for 10

INCLUSIVE OF VAT & DELIVERY

CH. QUES. PO. a in MICRO RESOURCES LTD
Southfield House,
11 Liverpool Gardens,
Worthing Sussex BN11 1RY
ACCESS VISA WELCOME
TEL: (0903) 213174

SPECTRUM/SPECTRUM

OSCILLOSCOPE

add on with software Samples up to 100KHz

Wide input range Variable timebase. Self contained.

£35.95

S. Hucklestep,
Inc. P & P
6 Ashling Road
Croydon
Surrey

HOME ACCOUNTS

Put your house in order! Comprehensive coverage of bank accounts, credit cards, HP etc. Inbuilt accuracy check. Projects cash flow for any period. Available for Commodore, Amstrad and Spectrum £8.45

Free details from: Discus Software Freeport, Beach, Alphenham, Brixham TQ28 8BR. Tel: 0805 455532

MONEYMAKER

Comprehensive share analyser for Dragon 32/64. Shareplan highlights stockmarket trends in a u-able and to share investment £3.99

Kedyn Software, 31 Harewood Avenue, Macclesfield, Cheshire, M13 1JH

C15 BLANK CASSETTES

WITH LIBRARY CASES

£20 per 100 full inclusive

UK HOME COMPUTERS (DEPT PCW)
82 Churchward Ave, Swindon, Wilts W9 3JF 0793 695034

BLANK CASSETTES

WITH LIBRARY CASES

	C10	C15	C20	C30
10	3.00	4.00	4.15	4.15
20	7.00	7.20	7.35	7.50
50	15.00	15.20	15.35	15.50
100	27.00	28.00	28.10	28.00

Fully inclusive (CDD 85p extra)

Superior Tapes Don't Settle for Less!

5 1/4" DS/DD DISKS

10 for £12.00 inc plastic case

100 for £100 (0793) 695034

UK HOME COMPUTERS 12 CHURCHWARD AVE, SWINDON, WILTS SN2 1JH

FOR HIRE

MIDLAND COMPUTER LIBRARY

A SUBSIDIARY OF PLATINUM GOLD

- OVER 4,000 different titles available for hire for the COMMODORE, SPECTRUM, BBC, AMSTRAD, ATARI and MSX computers
- ARCADE, ADVENTURE, EDUCATIONAL and BUSINESS software too.
- HIRE PRICES from only 75p INC P & B.
- 20% DISCOUNT off all purchase software
- FREE CATALOGUES
- FREE HINTS AND TIPS
- FAST RETURN OF POST SERVICE (if reserves are given)
- ALL GAMES manufactured ORIGINALS with full documentation
- OVER 6,000 satisfied members.
- EUROPEAN members welcome.
- LIMITED PERIOD ONLY FREE MEMBERSHIP
- Fully computerised system keeps track of your order. We pride ourselves in being the most professional Hire Library in the United Kingdom, with staff of 14 who know what the word service means. Backed by our own software company and programmers.

MIDLAND COMPUTER LIBRARY:

28 COLLEGE STREET, WORCESTER, WR1 2LS.
TEL: 0905 611072.

Please rush me my free catalogue stating machine.

Name:

Address:

* CHRISTMAS BARGAINS *

MEMOTECH MTX512 COMPUTER:

A superior designed computer. Suitable for novice or professional. 64K Ram. 16 Colours. 280 Processor. Fully Guaranteed.

ONLY £99.00p

PRINTERS (PANASONIC TYPE 1080)

A Near-Letter-Quality Dot-Matrix Printer made by Panasonic under licence. 80 cps. True descenders. Friction & Tractor Feed. Centronics Parallel Interface.

BARGAIN AT £175.00

SPECTRUM DISK DRIVE PACKAGE:

Comprises: The Beta Magic Button Disk Interface. 250K Single Sided Drive. Cables, & 10 free 5.25" Disks for

£195.00p.

Other Drives available. Orders Enquiries to:

UK HOME COMPUTERS (dept PCW)
82 Churchward Ave. Swindon, Wilts. 0793 695034

MAGAZINES



COMMODORE HORIZONS

Special offer! Two a limited period only!

Commodore Horizons, Special Sale Offer

Send a cheque or postal order made payable to Dragon User and accompanied by your name and address to: Dragon User Subscription Department, Oakfield House, Perrywood Road, Haywards Heath, Sussex RH16 3DH



DRAGON USER

To make the most of your Dragon you need Dragon User - the independent magazine for Dragon owners. To make sure that you receive a copy of Dragon User regularly subscribe direct to us. A year's subscription costs £14 for 12 issues (overseas rates available on application). Send a cheque or postal order made payable to Dragon User and accompanied by your name and address to: Dragon User Subscription Department, Oakfield House, Perrywood Road, Haywards Heath, Sussex RH16 3DH



Book
your
Classified
or
Semi-display
advert by
Credit
Card

Call
David
Osen
on
01-437 4343

VISA

Group For Research Into Paranormal Experiences
Present

★ ★ WITCHCRAFT REVEALED ★ ★

For BBC 'B', Electron, 16K or 48K Spectrum, Spectrum +
(State which version you require when ordering)

Now you can practice this ancient craft at your own home and become your own budding wizard! Witch. Perform many different rituals and spells which have been collected together after much research from authentic witches and wizards. This program includes the binding sex spell, the romantic love spell, the spell for extremely good luck and fortune and the ultimate ritual for Astral projection. Over twenty five spells and rituals are in this great package.

An incredible investment of only:

£4.95

HIGH VOLTAGE AND P&M SOFTWARE PRESENT

★ ★ THE DESIGNERS COLLECTION ★ ★

For 16K or 48K Spectrum and Spectrum +

Now with this amazing program you can completely redesign Knight Lore. Jet Set Willy, Manic Miner, Chuckle Egg and Hungry Horace so that you can create your own unique games not recognisable with the original game. No programming skill necessary.

"Very useful utility" Very easy to Use "P.C.W.

"Excellent" N.J. Shirley

"Each one is worth the price paid for all eight" C. Bedford.

The Designers Collection is supplied on a C30 tape and costs only:

£4.95

CHALLENGE "MANDY" TO THE NO. 1 SMASH HIT GAME

★ ★ STRIP PONTOON ★ ★

For BBC 'B', Electron, Spectrum 48K and Spectrum +
(State which version you require when ordering)

If you win enough she strips off from by items in superb 3D graphics with her favourite tune playing in the background. Now in its 10th month this cult game is still selling well.

"Excellent" Mr P. Kisser

Each version still costs only:

£2.99

★ ★ KNIGHT LORE 2 ★ ★

(The Conquest of Faerlight)

For 48K Spectrum & Spectrum +

Join Sabre man in his latest quest as he battles against all odds to save the castle of Faerlight. Knight Lore 2 features 3D Graphics, Amazing Animation, Filmmaker and all the favourite features of the original game. (Note: this software needs a copy of Knight Lore for protection of copyright reasons).

"More playable than the original Knight Lore" M. Whittington

All this for only:

£3.95

Send your cheque/cash/postal order to:

HIGH VOLTAGE

Dept. PCW, 46 Bridge Road, Park Gate, Hants, SO3 7AE

Or enclose a S.A.E. for further details on our products and competition details. (Details also supplied with an order)

PL102

ORIC-1/ATMOS

NEW: Xenon III, Demsel in Distress 7.50, The Quill 15.00 Gubbie, Playground 21.50, One Key Basic 5.95. New Atmos: Special Ops, Paras, Warlord 5.95, Johnny Reb 3.00, Orion Machine Code Monitor 10.95. Top Sellers: Chopper 6.95, Manic Miner 5.90.

Curious 3" disc drive 229.95 complete, over 46 software titles available on Cushman or Oric disc. Voice Synth, Prog. Joysticks Interface 29.95 each. Free delivery UK, +50p Europe. +21 other. Send cheque/PO or SAE for full list & over 120 titles, books & accessories.

FGC MAILORDER, 20 MEADOWCROFT, EUXTON, CHORLEY, LANCs PR7 6BU. (trade enquiries please send letterhead to FGC Distribution)

PL11

EPSON HX-20 personal portable business computer for sale. Twelve months old. Excellent. No longer required, cost £525. Offers? Tel 051-428-8424.

SPECTRUM 48K. Mounted onto board with data recorder. With Reset/Load switches. Now £85. Orington 22057.

CENTRONICS 778 Printer for BBC. Dot matrix. Manual. 1 ribbons - load + paper. Ideal for listings. Only £75. Tel. Malden 669398 (0621).

COMMODORE "MPS802" Printer. 60 CPS. bi-directional. true dot-matrix, graphics, high-res. etc. Bought 30/10/84. Excellent condition. £200 or offer. Ming 0256 857422.

THIS SPACE
FOR SALE

£28 (inc. VAT)

TELEPHONE:
PCW CLASSIFIED
01-437 4349 Ext 206 (x36)

RECRUITMENT

DUE TO EXPANSION
MAJOR SOFTWARE CONVERSION
HOUSE
HAS VACANCIES FOR
Z80 PROGRAMMERS
Previous in-house experience not essential.

Salary negotiable in line with previous experience. Successful applicants would have experience in Z80 Assembly Language and a knowledge of CP/M would be an advantage. Write in strict confidence, enclosing C.V. or Phone for an Application Form.

Mr Tony Fagelman
SENTIENT SOFTWARE LTD.
Branch House,
18 Branch Road,
Armley,
Leeds
LS12 3AQ
Tel: (0532) 791136

PL10

ADVENTURE
HELPLINE

Emerald Isle on Amstrad. How do I shift the stone block from the crypt to graffin chamber? Billy McDonnell, 11 Knockmenda Road, Clonsilla, Dublin 22, Ireland.

NOW! A FASCINATING GAME THE WHOLE FAMILY CAN ENJOY...

COMPUTER WORDSEARCH

Move the cursor strike out the hidden word... see your score rise as the wordlist gets small and your time falls... will you beat the clock?

★TIMER with HOLD button★QUIT when you like★ALL ANSWERS SHOWN★FAST RE-START AFTER EACH GAME★EDUCATIONAL FUN AGES FROM 6 to 96★A DIFFERENT GAME EVERY TIME★SCREEN SHOWS WORDSQUARE, WORDLIST, TITLE, TIME SCORE & INSTRUCTIONS

SPECIAL OFFER: Save 50% or RRP - Send cheque/PO £4.95 payable to SOFTFIRM. Free fast delivery. 48-hour despatch. Supplied in library case with quality card inlay. Free replacement guarantee.

SOFTFIRM, 21 ASHBOURNE WAY, THATCHAM, BERKS RG13 4SJ enclose name & address.

SPECTRUM 48K

FOR SALE

QL BACKUP

Duplicates projected software at a budget price. Stretch format with postcard, clone disk and report. Also one simple to use AMOVSI formatted send see - £4.95. With 50 with one MOUT to Steve Jones, 93 Farnborough Rd, Tooting Bec, London SW17.

Disc Drive 250K 40T 0 D one month old standard interface its DL BBC etc. Manual supplied one month guarantee £40 one 01-845 6419

SPECTRUM +, Interface 1, Microdrive twenty-five cartridges. Cambridge programmable Kempston pro joystick interfaces, pro 5000 joystick. Currah speech tape recorder, a bargain, load in software, £230 one. Call Bishopton (0505) 863678 Paul

CHRISTMAS BARGAIN. 3 shop sold joysticks for £14.95, 10 for £24.95 inclusive. Computer Supplies 146 Church Road, Boston, Lincs PE21 0JX

NO.1 SWORDS & SORCERY



SWORDS & SORCERY

Swords and Sorcery represents the first example of the ultimate in graphic adventures using the unique MIDAS system.

Swords and Sorcery differs from other adventures in that you guide your character through the unending corridors of the underworld on a quest for material, physical and/or spiritual power. The choice is yours.

You begin as a novice with limited abilities in the use of magic, sword play and stealth (lock picking, thieving etc)

As you wander the corridors, you will encounter beings meek and mighty, discover untold wealth and worthless trash. Some objects will increase your powers, whilst some will be dangerous and still others will be protected from pilferers (you) by fiendishly ingenious traps, all designed to help or hinder you on your pilgrimage to power and glory.

There are quests within quests within Swords and Sorcery, for those who want to follow them. Some are given others

must be found, and some are lost causes. There are many ways of opening the gate between the levels of the dungeons. Some are obscure and many, others obvious and dangerous. The most profitable paths are both. The Ultimate goal of many will be to find the lost armour of Zoh, which was made by its maker, and its parts scattered across the levels. What, where, how, who and why are answers to be found. All that is known is the prayer of the seekers.

WHEN DARK CABALLUS HIS COUNCILS LEND US
LET NOT THE RED CLUPEA HARANGUE US TURN US
FROM WHAT SEEMS TREMENDOUS AND THIS TO
ZOB'S GREAT TREASURE SEND US.

You need never tire of Swords and Sorcery when this dungeon can no longer hold you, the next awaits... there are a series of expansion modules planned to extend your enjoyment indefinitely.

**Available on Cassette £9.95
SPECTRUM 48K**

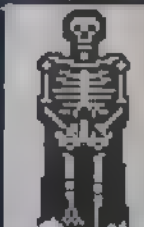
NEW
RELEASE
AVAILABLE
18th NOVEMBER



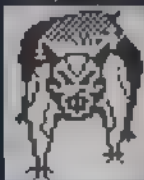
WIZARDS power level 1 -



DRAGON power level 7 -



LYCH power level 6 -



WEREWOLF power level 4 -
a selection of your opponents

(Multi Dimensional Animation System)

MIDAS ADVENTURE CONCEPT

Stunning 3D graphic animation simulating video disk games.

A unique fully interactive adventure language using the latest ARTIFICIAL INTELLIGENCE techniques.

State of the art data compression techniques enabling enormous scenarios and vocabularies to be incorporated.

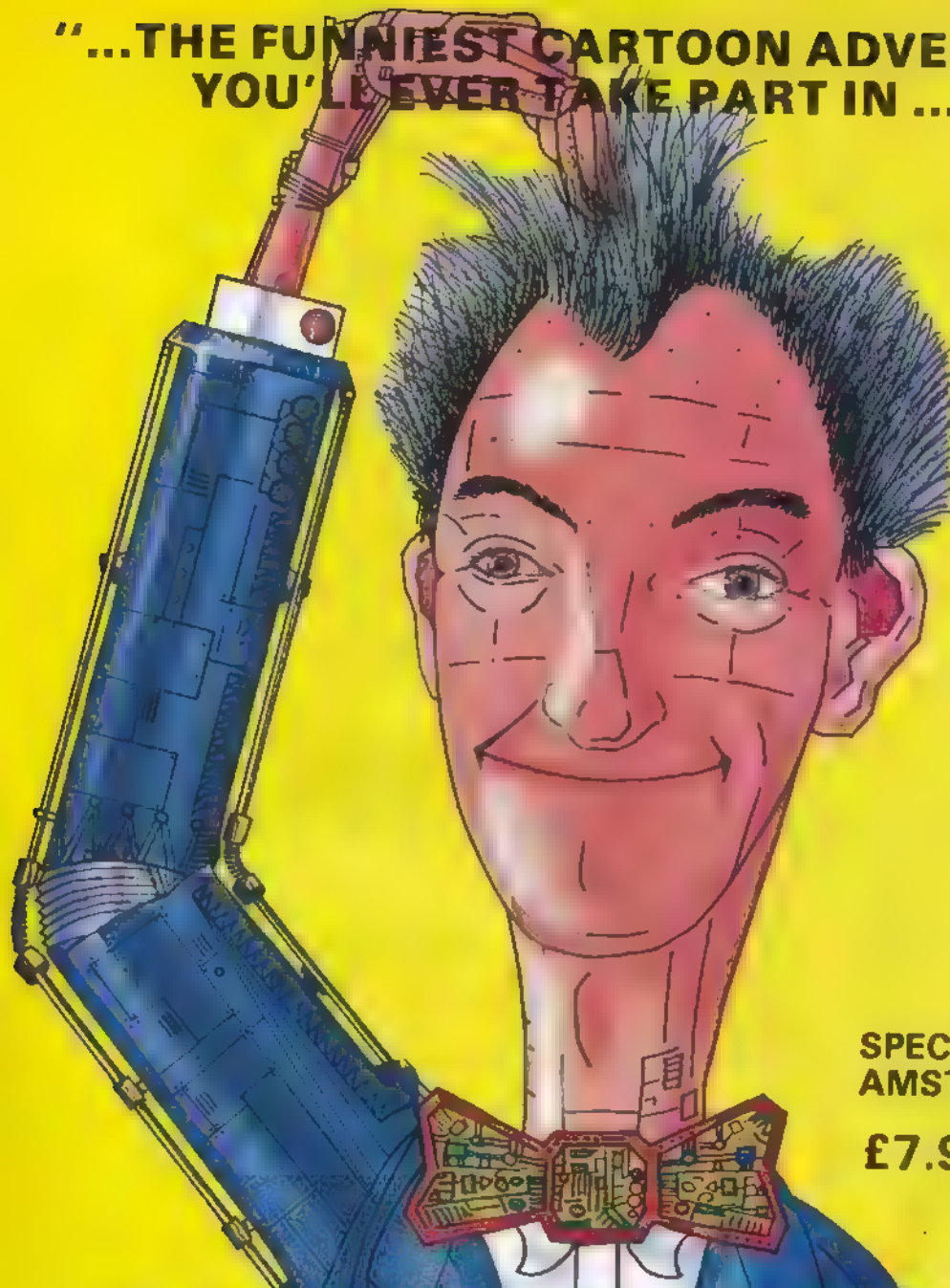
Real time Interactive Conflict Sequences. Talk to your opponent, attack them, flee them and even confuse them. Develop your own unique player characters. For example specialise in magic, swordplay etc.

Total expandability your own characters can be transferred to future adventures and new opponents, scenarios and objects can be added to all the games.

A series of expansion modules to increase indefinitely the playing life of each game written with MIDAS.

**Amstrad & Commodore
versions available soon**

"...THE FUNNIEST CARTOON ADVENTURE
YOU'LL EVER TAKE PART IN ..."



SPECTRUM 48K
AMSTRAD 464

£7.95

SWEEVO'S WORLD



GARGOYLE
SPECIAL EDITION

GARGOYLE GAMES LTD. 74 KING STREET, DUDLEY, WEST MIDLANDS DY1 2AB
Telephone: (Sales) 0384 238777 (General) 0384 237222

WAREHOUSE CLEARANCE

100 DEMONSTRATION
STOCK
AT SILLY PRICES!

1436 MI3 MONITOR

Standard Resolution - 14"

(Suitable for IBM,
IBM compatibles)

INC. VAT and CARRAIGE

£175.00

1456 MI3 MONITOR

Medium Resolution - 14"

(Suitable for IBM,
IBM compatibles)

INC. VAT and CARRAIGE

£205.00

Ring (0462) 31225 NOW!

NEW FUTURE SOFTWARE

BUY DIRECT AND SAVE £££££
ON THESE BACK CATALOGUE BARGAINS

SPECTRUM		COMMODORE 64			
RRP	OUR PRICE	RRP	OUR PRICE		
20% OF BIG ADGER	7.95	2.50	HYPERDRIFT	4.95	2.99
WINGS LOOPY LALPORY	6.95	2.50	NATO COMMANDER	4.95	2.99
SYSTEM 1000	14.95	2.99	1000	7.95	2.99
MINI-KRNER	6.95	1.99	NOVEL PRIMER	7.95	2.99
SLIT: SWANAN STRIKER	6.95	1.99	WATERBURY	7.95	2.99
GREAT SPACE RACE	14.95	2.99	1000	7.95	2.99
SPACE SHUTTLE	9.95	2.99	1000	7.95	2.99
SL: KATER	6.95	1.99	1000	7.95	2.99
JASPER	6.95	1.99	1000	7.95	2.99
RAYFILL	6.95	1.99	1000	7.95	2.99
SEA JUNGLE BIRD	3.95	2.99	1000	7.95	2.99
CLARKING	1.95	2.99	1000	7.95	2.99
DESSER DAN	1.95	2.99	1000	7.95	2.99
TRASH C. TROUBLE	1.95	2.99	1000	7.95	2.99
GYRON: BACK IN STOCK	9.95	2.75	1000	7.95	2.99
BBC		COMMODORE 64			
RRP	OUR PRICE	RRP	OUR PRICE		
*ARZAN	7.95	2.99	1000	7.95	2.99
SPIESMAN	9.95	1.99	1000	7.95	2.99
MUCK	6.95	1.99	1000	7.95	2.99
SEA: W. BLACKER	6.95	1.99	1000	7.95	2.99
SYSTEM 1000	14.95	2.99	1000	7.95	2.99
UPSTAIRS: RACE	9.95	2.99	1000	7.95	2.99
MUSIC SYNTH	9.95	2.99	1000	7.95	2.99
VALLEY	14.95	2.99	1000	7.95	2.99
ROBMAN	7.95	2.99	1000	7.95	2.99
ELECTRON		COMMODORE 64			
RRP	OUR PRICE	RRP	OUR PRICE		
BUBBLASTER	6.95	2.99	1000	7.95	2.99
HUNTERMAN	6.95	2.99	1000	7.95	2.99
LUNAR RESCUE	6.95	2.99	1000	7.95	2.99
SHUTTLE	2.95	1.99	1000	7.95	2.99
SPACE SHUTTLE	6.95	2.99	1000	7.95	2.99
TYFENGT: SAM	9.95	2.25	1000	7.95	2.99
ATARI 400/800		COMMODORE 64			
RRP	OUR PRICE	RRP	OUR PRICE		
ARENA 3000	6.95	2.99	1000	7.95	2.99
CUTHER: WALKABOUT	6.95	2.99	1000	7.95	2.99
DANGER RANGER	6.95	2.99	1000	7.95	2.99
MR EG	6.95	2.99	1000	7.95	2.99
PR: HUNTER	6.95	2.99	1000	7.95	2.99
SPACE SHUTTLE	6.95	2.99	1000	7.95	2.99
ACORN		COMMODORE 64			
RRP	OUR PRICE	RRP	OUR PRICE		
QUICKSHOT 3	5.95	2.99	1000	7.95	2.99
COURTESY 1	5.95	2.99	1000	7.95	2.99
CHE: JOYSTICK ADAPTORS	2.95	1.99	1000	7.95	2.99
SPECTRUM SWITCH: INTERFACE	6.95	2.99	1000	7.95	2.99

10% discount on orders £30 or over. This is just a small selection of games on offer. Send now for our current page catalogue S & L. please. BPO & Overseas orders despatch 15%.

ALL PRICES INC VAT & P&P.
CHEQUES POSTAL ORDERS TO:
NEW FUTURE SOFTWARE

and send to:
30 Wilson Street, Carlisle, Cumbria

POSBA

PITMAN COMPUTER DIARIES 1986

For Planning and Programming

Besides being handy, day-to-day diaries, each title is packed with useful reference material for your micro.



- * Useful Programs
- * Machine Language
- * Sound, Video, Graphics

- * BASIC
- * Disc Commands
- * Memory Layouts

Order your copy NOW.

Send the completed form to: Geraldine Smyth, Scot Books Ltd, 12-13 Little Newport Street, London WC2H 7PP.

ORDER FORM

Please send me:

Acorn Computer Diary
ISBN 0 273 02428 0 £3.95
Amstrad Computer Diary
ISBN 0 273 02429 9 £3.95
Commodore Computer Diary
ISBN 0 273 02430 2 £3.95
Sinclair Computer Diary
ISBN 0 273 02431 0 £3.95

QTY

I enclose cheque/postal order payable to Scot Books Ltd,
for £

Alternatively please debit my

Number

Signed

Name

Address

Postage and packaging free. Allow 3 days for delivery.

Pitman

ONLY THE BRAVEST FLY.

TOMAHAWK

New, from the author of *Fighter Pilot*, a stunningly realistic helicopter simulation that puts you in command of an Apache Advanced Attack helicopter. You will learn to take off, to land, to manoeuvre and locate and destroy enemy tanks using Hellfire anti-tank missiles. You will experience authentic battlefield conditions as you endeavour to carry out your mission and return safely to base.

BY DK MARSHALL

48K SPECTRUM

Digital Integration

McDonnell Douglas AH-64 Apache

£9.95

inc. p&p & VAT



Spectacular 3D cockpit view with over 7,000 ground features. Authentic sound performance. Ground attack and air-to-air interception, with laser guided missiles, rockets and 30 mm gun. Doppler navigation and target tracking. Day/Night vision systems.

Cloudy, Crosswinds, Turbulence. Pilot ratings — Trained to Ace. Impressive sound effects.

Pilot's Notes. Trade & Export Options.

FREE HELICOPTER FLIGHT Competition

SPECTRUM

Tomahawk 48K
Night Gunner 48K
Fighter Pilot 48K

COMMODORE 64

Speed King Disk £12.95
Speed King Cassette £9.95
Fighter Pilot Disk £14.95
Fighter Pilot Cassette £9.95

AMSTRAD CPC 464

Fighter Pilot £9.95
Fighter Pilot Disk £13.95

☐ £9.95
☐ £6.95
☐ £7.95

Cheques payable to Digital Integration Ltd

I enclose a cheque/P.O. for _____ Total

Name _____

Address _____

Or debit my Access Account No. _____

Telex Sales
(0276) 684959



Trade and Export enquiries welcome. Lifetime Guarantee.

Please send to **DIGITAL INTEGRATION**

Watchmoor Trade Centre,
Watchmoor Road,
Camberley, Surrey
GU15 3AJ



VAT and p. & p. inclusive within UK (Overseas inc. 55p. per cassette)

New Releases

GOOD CHOICE

Automata are still around and producing some stunningly cheap compilation tapes. The 10 pack volume two has ten games for £10 that makes each one half the usual price of a budget game. It's a mixture of straightforward (well, maybe not straight but forward certainly) arcade games and twisted adventures, with a fruit machine program and a cocktail database to round off your evening of play.

I particularly liked *Paradise in Microdot* which is one of the more bizarre adventures I've ever played, and *Pi in the Sky* is the sort of enter-

taining arcade game that exemplifies what a budget game ought to be.

A good choice for uncertain aunts who don't know what program to buy for computer-owning relatives, or for those who've just bought a Spectrum and want a lot of material quickly.

Program 10 Pack
Price £10
Micro Spectrum
Supplier Automata
PO Box 78
Southsea
Hants PO4 9SL

GRAND SCALE

Tombstowne, the latest Amsoft release, is a multi-screen large sprite game broadly in the style of some of Mikro-Gen's recent *Wally* games. The task is to rescue the lost pages of the book of spells from the Castle.

Getting the pages involves finding your way around the various rooms of the castle and finding and using a variety of objects.

The graphics are, in places, excellent: almost *Sorcery* like in detail and design, on the other hand sometimes when sprites pass one another you get what almost seems to be attribute problems - a nasty flickery effect.



In some ways this is like *Manic Miner* played on a grand scale, but with the bonus of some intelligence being required to know what to do where to get from one room to another. My criticism would be that the game lacks a certain spark.

Perhaps that's an overly personal judgement, though, which comes from seeing too many such games. Worth a look for sure.

Program *Tombstowne*
Price £8.95
Micro Amstrad
Supplier Amsoft
169 Kings Road
Brentwood
Essex

RIGHT LEVEL

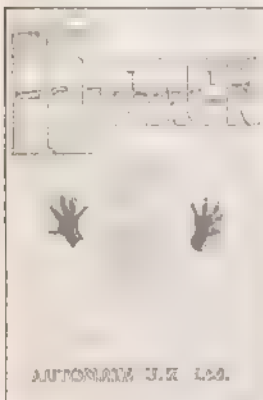
Versions of, well let's be careful and say games like *Trivial Pursuit*, since TP isn't the only grand quiz game, are beginning to crop up on computer. Mostly they are dire.

One that isn't dire, although it still suffers some of the basic failing of this sort of computer replication, is *Quiz Quest* from Alligata Software. It's neatly presented and easy to use and, best of all, the questions seem to have been set at the right level for averagely well informed (British) adults - you have to stretch your brain a bit.

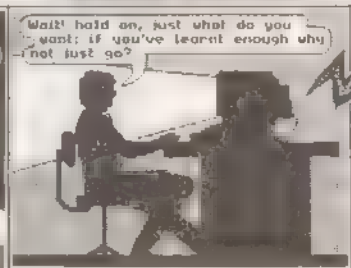
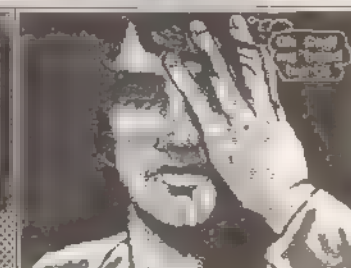
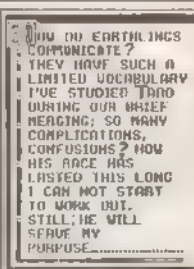
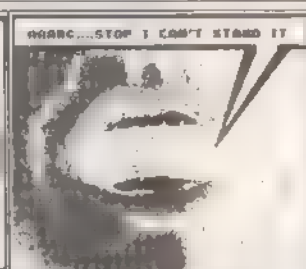
The basic idea is simple, a main program to handle the presentation and then a number of files on tape contain 1,000 questions on pop, TV, general knowledge and sport etc. Questions are answered using a multiple choice format and there is a facility to enter your own files.

As quiz programs go this is one of the best, though for what it's worth I think I prefer question cards over computers every time.

Program *Quiz Quest*
Price £4.99
Micro Amstrad
Supplier Alligata Software
1 Orange Street
Sheffield



The Rogue Program



Created entirely using a BBC micro and an KMX mouse

continued next week

New Releases

À DROITE

More goodish educational software from Chalksoft. After their excellent economy simulation comes *Centre Ville*, a disc based French language teaching program. Actually it is three programs in one, all intended for beginners in the language.

Centre Ville, the title game, is all about issuing simple direction instructions to the hapless M. Chou who comes to Centre Ville sans map and who wants to visit just about every sight in the town. If M. Chou were for real I think I'd have murdered him pretty quickly; his chirpy smile and waving hand remind me of those born-again Christians who try to stop you in the street.

Nevertheless, in issuing M. Chou with his instructions, quite a lot of French is tested and surreptitiously taught. Using a menu option, where a large number of directions indications are printed (in

French), M. Chou must be guided around the streets of Centre Ville, eg, go straight on, turn right, straight on, turn left, etc, etc.

Get M. Chou to his chosen destination and there he is grinning inanely at you. It isn't only a matter of getting the directions right, you also have to be as economic as possible in your directions - the less commands the higher the score - this, of course, means knowing your French.

The other programs are concerned with colours and telling the time; both are well designed and neatly presented but, for me, lack the unforgettable quality of M. Chou and his interminable requests for information.

Program *Centre Ville*
Price £17.50
Micro BBC
Supplier Chalksoft
PO Box 49
Spalding
Lincs PE11 1NZ

EXOTIC BUGS

The Young Ones has been turned into a computer game. Impossible, you say?

Yep, dead right; Orpheus has tried it, and what a mistake it has turned out to be.

Here are the good points: it does feature little animated figures who look vaguely like the characters in the TV programme and Orpheus seems to have spent a lot of time trying to inject wild wacky anarchic humour into the game. I mean, Neil begins all his utterances with 'Oh Man' and Rick uses the word 'girly'

Pick of the week

CLASSIC VIRTUES

THINK!



Ariolasoft's most recent release *Think!* is the sort of program you might easily miss or ignore.

Not an arcade game or an adventure, almost totally lacking in animation, it is a board game for the computer. A board game in the sense that you move pieces on a board which is a six by six grid of squares and where the kind of strategy, brains and cunning you might use in chess are paramount.

The virtues of *Think!* are really nothing to do with computers or computer programming, it is simply a wonderfully addictive and ingeniously designed game. It has dim connections with *Connect 4* but only in terms of the overall objective - to get four pieces in a row either vertically, horizontally or diagonally.

Pieces are placed, turn by turn, on either the bottom or right-hand edges of the board, existing pieces in the same row or column are moved along one space as each piece is placed. It has the classic board game virtues - simple rules which can nevertheless lead to astoundingly complex board positions. Furored brows and intense concentration required.

The game is nicely presented, with hint and puzzle-solving options, record of moves made, instant replay and a host of different

display options. You can, of course, play against the computer and at the highest levels it will show you it thinking, by a flashing cursor that whizzes around the perimeter of the board indicating possible moves. The Spectrum, is, at the highest levels, almost unbeatable (that 'almost' is important - so far as the authors of the game know, there is no logical, algorithmic reason why the computer should be unbeatable).

The ideal program with which to intimidate the family at Christmas.

Program *Think!*
Price £7.95
Micro Spectrum
Supplier Ariolasoft
Asphalte House
Palace Street
London SW1E 5HS



This Week

Program	Type	Micro	Price	Supplier	Play and Read	Ed	BBC B	£28.95	Prisma Soft
Deathwake	Arc	Amstrad	£7.95	Quicksilver	The Worm in Paradise	Ad	Commodore 64	£9.95	Level 9
Renegade	Arc	Amstrad	£7.95	Kuma	Deathwake	Arc	Commodore 64	£7.95	Quicksilver
Strangeloop	Arc	Amstrad	£8.95	Virgin Games	Fight Night	Arc	Commodore 64	£9.95	US Gold
Stock Market	Ed	Amstrad	£14.95	Collins	Friday the 13th	Arc	Commodore 64	£8.95	Domark
Time Manager	Ed	Amstrad	£14.95	Collins	Gyroscope	Arc	Commodore 64	£7.95	Melbourne House
The Worm in Paradise	Ad	BBC	£9.95	Level 9	Scaletrix	Arc	Commodore 64	£9.95	Leisure Genius
Astro Plumber	Arc	BBC	£2.50	Blue Ribbon	Starion	Arc	Commodore 64	£8.95	Melbourne House
Citadel	Arc	BBC	£9.95	Superior	The Young Ones	Arc	Commodore 64	£7.95	Orpheus
Diamond Mine II	Arc	BBC	£2.50	Blue Ribbon	Zorro	Arc	Commodore 64	£9.95	US Gold
Dr Who - Mines	Arc	BBC	£19.95	Micro Power	Commando	Arc	Elite	£7.95	Elite
Joey	Arc	BBC	£2.50	Blue Ribbon	Q-Calc	Ut	QL	£9.95	Psientific
Ravage	Arc	BBC	£2.50	Blue Ribbon	The Worm in Paradise	Ad	Spectrum	£9.95	Level 9
Artist	UI	BBC	£2.50	Blue Ribbon					

-this is called character independence in the trade.

The game looks vaguely like *Frankie*, since the characters wander about the rooms of the Young Ones' student house, displayed as double storey. Your view depends on where things are happening - you see whichever room your chosen character is in and another room where a lot is going on.

Commands are all issued via the joystick, à la *Frankie*, using a series of menus headed *Action*, *Walk*, *Talk*. The first leads to options such as opening cupboards and picking up objects, *Talk* leads the character to offer suggestions about what he should do and what he wants, eg. "I'd really like to smash the video" and *Walk* enables you to move the character to another room. The game revolves around acting in characters eg. Vyvyan tends to like destroying things.

So it goes and as such the game would merely be dull. However, the whole thing is chock full of bugs and bad programming. Bad programming takes the form of speech bubbles that flicker wildly if too much is going on at once, and become illegible.

Bugs are more exotic: the syntax logic in the speech bubbles appears to have downed a few too many dodgy pills leading to such remarkable utterances as *I think I should Open the Mikes Bed* (sic). Sometimes these descriptions disappear over the borders of the screen.

The whole thing is a mess and clearly isn't ready for release, although it is redeemed by some excellent

music which will entertain you for around ten minutes. The question that creeps into my mind now is, what have all those magazines which have previewed and raved about this game been looking at?

Program *The Young Ones*
Price £7.95
Micro Spectrum
Supplier Orpheus
The Smithy
Church Farm
Hadley St. George
Beds SG19 3HP

MANKIND

Hype Raid is one of the latest batch of budget titles from Atlantis Software who were in there fighting at the beginning with Mastertronic. *Hype Raid* is, if not completely original, at least a variation of some game ideas not so done to death as usual.

It reminds me a little of *Frank n Stein*, a venerable game by PSS where you had to use your reasoning and

timing to use a cleverly constructed series of lifts. It's also like *Booty* in that you have to collect coloured keys.

Combine those two elements and you have a game in which you have to find your way around various screens using a series of up and down lifts and collect a series of key and data cards needed to get you through a number of differently coloured doors. All this in a *Miner* like scenario of guards who wander back and forth. Certainly the game requires more thought than the usual budget effort.

The point of all this is to collect all the parts of the *Mig Starfighter*, a nasty Russian device which may well be their answer to *Star Wars*. In any event your task is to aggressively share their technology for the good of mankind and keeping the Latin American countries Christian. One of the most ingenious budget games I've seen in a long while.

Program *Hype Raid*
Price £1.99
Micro Spectrum
Supplier Atlantis Software
19 Prebend Street
London
N1 8PF

INGENIOUS

Time Sanctuary is an unusual program from MC Lothlorien - computer wargames from way back. This, though, is an adventure in a style all of its own, although there are touches of *Lords of Midnight* about some of the ideas.

The plot is quite clear, in-

volving injustice and an AWOL time machine. Your main objective is to find out where it went and get it back. This involves wandering around a strange land (which reminds me faintly of Pepperland with its various garish colour clashes.) The game features a kind of simplified *LOM* landscaping, where objects first seen in the distance grow in size as you move towards them.

The interaction is kept to single key presses for the most part, but an ingenious series of scrolling commands means that quite complex and specific instructions can be issued. There are various other characters in the game with whom you must deal, whose interaction with you is a key feature of the game. Their impression of you matters if you seek their help.

I think *Time Sanctuary* has plenty of imagination but lacks programming skill and slickness, the graphics have that user defined look and the character set has not been redesigned. The game looks like it is in Basic (although it probably isn't) though those are, to be fair, just the kind of comments that 'true adventurers' tell me are irrelevant to a true assessment of an adventure. I'll shut up and say it looks ropey, but shows signs of much original thought.

Program *Time Sanctuary*
Price £7.95
Micro Spectrum
Supplier MC Lothlorien
56A Park Lane
Poynton
SK12 1RE



Alliedina Cave	Arc	Spectrum	£6.95	Artic
Back to Skool	Arc	Spectrum	£6.95	Microsphere
Deathwake	Arc	Spectrum	£7.95	Quicksilver
The Living Body	III	Spectrum	£14.95	Martech
Think!	S	Spectrum	£7.95	Ariolasoft
Cammac One	Ut	Spectrum	£5.95	Micro Zeigthy
Cammac Three	Ul	Spectrum	£19.95	Micro Zeigthy
Cammac Two	Ul	Spectrum	£11.99	Micro Zeigthy
Romaze	Arc	ZX81	£3.95	C Wehner

Ariolasoft, Retail. **Artic**, Main Street, Brandesburton, Driffield YO25 8RL, 0401 43553. **Blue Ribbon**, Silver House, Silver Street, Doncaster, South Yorkshire DN1 1HL, 0302 21137. **C Wehner**, 9 Upper Park, NW3 2UN. **Collins**, 8 Grafton Street, London W1X 3LA. **Domark**, 204 Warple Road, London SW20 8PN, 01-947 5624. **Elite**, 55

Bradford Street, Walsall WS1 3QD, 0922 611215. **Kuma**, Kuma Computers, 12 Horseshoe Park, Pangbourne RG8 7JW, 07357 4335. **Laisure Genius**, 3 Montagu Row, London W1H 1AB, 01-935 4622. **Level 9**, 229 Hughenden Road, High Wycombe, Bucks HP13 5PG, 0494 26871. **Martech**, Martech House, Bay Terrace, Penvensey Bay, East Sussex BN24 6EE, 0323 768456. **Melbourne House**, 39 Milton Trading Estate, Abingdon, Oxon OX14 4TD, 0235 835001. **Micro Power**, Northwood House, North Street, Leeds LS7 2BB, 0532 434006. **Microsphere**, 72 Rosebury Road, London N10 2LA, 01-883 9411. **Psientific**, 37 Cottesmore Road, Hestle, North Humberside HU13 9JQ, 0482 649187. **Quicksilver**, Palmerston Park House, 13 Palmerston Road, Southampton, Hampshire SO1 1LL, 0703 20169. **Superior**, Regent House, Skinner Lane, Leeds LS7 1AX, 0532 459453. **US Gold**, Unit 11 The Parkway Ind Centre, Heneage Street, Birmingham B7 4LY, 021 359 3020.

This Week



Alternative World

It seems to be fashionable to be sniffy about computer games.

A writer in one recent report I read said that young people who owned computers and used them mostly for games-playing had no significant advantage when starting computer studies at school.

I wonder. At the simplest level, my own experience suggest that children with home-computers gain at the very least a basic knowledge of the Qwerty keyboard. While the typing rooms in schools are still too likely to be seen, however erroneously, as low-status 'female' ghettos, home computers are among the few ways in which the intelligent young are likely to be made familiar with an important part of their future working environment.

Then I wonder about the computer studies that these pupils are starting. Are they learning to program? Are they being given general computer awareness courses? Are they plugging away at some of the dreaded 'education' software?

Watch young people playing a good computer game together and the first thing you realise from their cryptic comments is that they share an intimate knowledge of an alternative world. Games-playing is not the solitary activity that some of its critics claim. Players like to share their insights, knacks and dodges with fellow devotees.

Language, in fact, is what it's all about. They are immersed in the game's symbol-system, and are reading it on various levels.

First, maybe, there's the fictional level, the pretext of the game, the stuff it talks about on the cassette inlay. "You are alone on a monster-ridden planet and being attacked..." or "Miner Willy has had a party and must collect...". That sort of thing. This level seems to matter the first time you play a game, but is soon forgotten. Its relative insignificance is often signalled by jokiness - mutant camels, flying hairspray, etc.

Next comes the manipulative level, where the player learns how the joystick or keyboard relates to the screen. Every good game has its own feel, and the hand on the joystick trigger must learn to react faster than the conscious mind.

Then comes a deeper level where you attune to the programmer's wavelength - where consciously or unconsciously you find the patterns in the game, and suddenly realise how particular problems can be coped with.

This interconnects with a more technical level, where the player gets to know how sprites behave.

There can also be a hacking level, where useful Pokes, often communicated as folklore on an informal network, help you to beat the system by playing it on its own machine-code terms. All's fair in computer-gaming.

Games are absorbing because players can operate on all these levels simultaneously, enjoying a rich and multi-layered experience.

Too often educational programs present the machine as the all-knowing expert that marks you right or wrong and penalises you if you step outside its often all too rigid categories. (Stories of programs grimly rejecting intelligent input that hasn't been anticipated are, of course, legion.) The computer is cast as rigid tyrant that humans must bow before. Fit in or fail.

In a game, on the other hand, the program is a system that challenges you to beat it, by fair means or foul, where you probably discover the best strategy by ganging up with your friends.

I know which I think offers the best preparation for life.

George Simmons

Puzzle No 186

Can seven plus eight ever equal 12? Yes! - if the sum is in the form of an alphabetic as shown below:

S E V E N +
E I G H T
T W E L V E

As is usual in puzzles of this type, each letter stands for a digit, the same letter representing the same digit whenever it occurs. Can you find the original sum - though you may find more than one possible answer!

Solution to Puzzle No 181

The correct sum is: $17 \times 4 = 68 + 28 = 93$.

```
10 FOR A=1 TO 9
20 FOR B=1 TO 9
30 IF A+B THEN GOTO 250
40 FOR C=1 TO 9
50 IF C#A OR C#B THEN GOTO 240
60 LET Y=A+B+C
70 IF Y#10 THEN GOTO 240
80 LET X=Y/10
90 IF X#A OR X#B OR X#C OR X#0 THEN GOTO 240
100 IF X#A OR X#B OR X#C OR X#0 THEN GOTO 240
110 FOR D=1 TO 9
120 IF D#A OR D#B OR D#C OR D#0 THEN GOTO 230
130 FOR E=1 TO 9
140 IF E#A OR E#B OR E#C OR E#D OR E#0 THEN GOTO 220
150 LET Y=X+E
160 IF Y#10 THEN GOTO 220
170 LET X=Y/10
180 LET Y=X+E
190 IF Y#10 THEN GOTO 220
200 IF X#A OR X#B OR X#C OR X#D OR X#0 OR X#E OR X#0 THEN GOTO 220
210 PRINT A,B,C,D,E,Y
220 NEXT E
230 NEXT D
240 NEXT C
250 NEXT B
260 NEXT A
```

The program works by generating the first three digits (A, B, and C) and calculating the resulting product $(A \times 10 + B) \times C$. This gives the result of the first stage of the calculation. The digits of this product are then checked to see that they have not already been used (lines 80 to 100). A further two values are then generated in two FOR/NEXT loops, again checking for duplication of digits (lines 110 to 140). These digits represent the number which is to be added. When this is done (line 150) the final result is again checked for duplication.

Line 210 prints any solution which passes these tests.

Winner of Puzzle No 181

The winner is E J Sargeant of Long Eaton, Nottingham, who will be receiving £10.

Rules

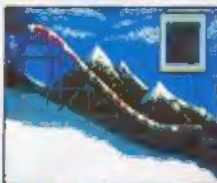
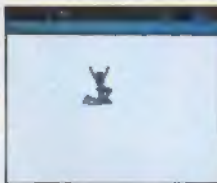
The closing date for Puzzle No 186 is January 1.

The Hackers



There's never been a better reason
for looking forward to Winter!

WINTER GAMES



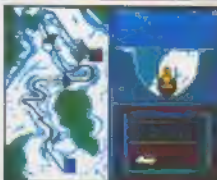
Screens from Commodore 64 version of game

COMMODORE 64/128

CASSETTE £9.95

DISK £14.95

Available Soon for
Spectrum 48K
& Amstrad



You've captured the gold in Summer Games™ and Summer Games II™ — now it's on to the Winter Games! And what an incredible setting — a completely realistic winter wonderland featuring six action-packed events. You can compete against your friends or the computer.

First choose the country you want to represent. Then it's practice, training and learning a winning strategy for each event. Now the Opening Ceremony and the competition begins. Will you be the one who takes the gold at the Awards Ceremony?

The quest for the gold continues... And it's all here — the strategy, the challenge, the competition, the art and pageantry of Winter Games!

- ▶ Six Winter Events: Bobsled, Ski Jump, Figure Skating, Free-Style Skating, Hot Dog Aerials and the Biathlon
- ▶ Opening, Closing and Awards Ceremonies complete with National Anthems
- ▶ Compete Against the Computer or Your Friends and Family
- ▶ Unique Joystick Control — Requires Timing and Skill
- ▶ One to Eight Players



EPYX
COMPUTER SOFTWARE

COMING
SOON

Roller Coaster

SPECTRUM

cassette

£6.95

COMMODORE

cassette

disc

£7.95 £12.95

AMSTRAD

cassette

disc

£8.95 £13.95

The worlds first theme-park game with numerous hair-raising attractions including Roller Coaster, Ghost Train, Log Flume, Big Wheel, Waltzers and several other exciting mystery rides.



Just send a cheque or P.O.
payable to 'Elite' or quote
your Visa number.

elite

